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ARCHITECTURE

ENGINEERING

DECORATION

CONSTRUCTION

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CONTENTS.

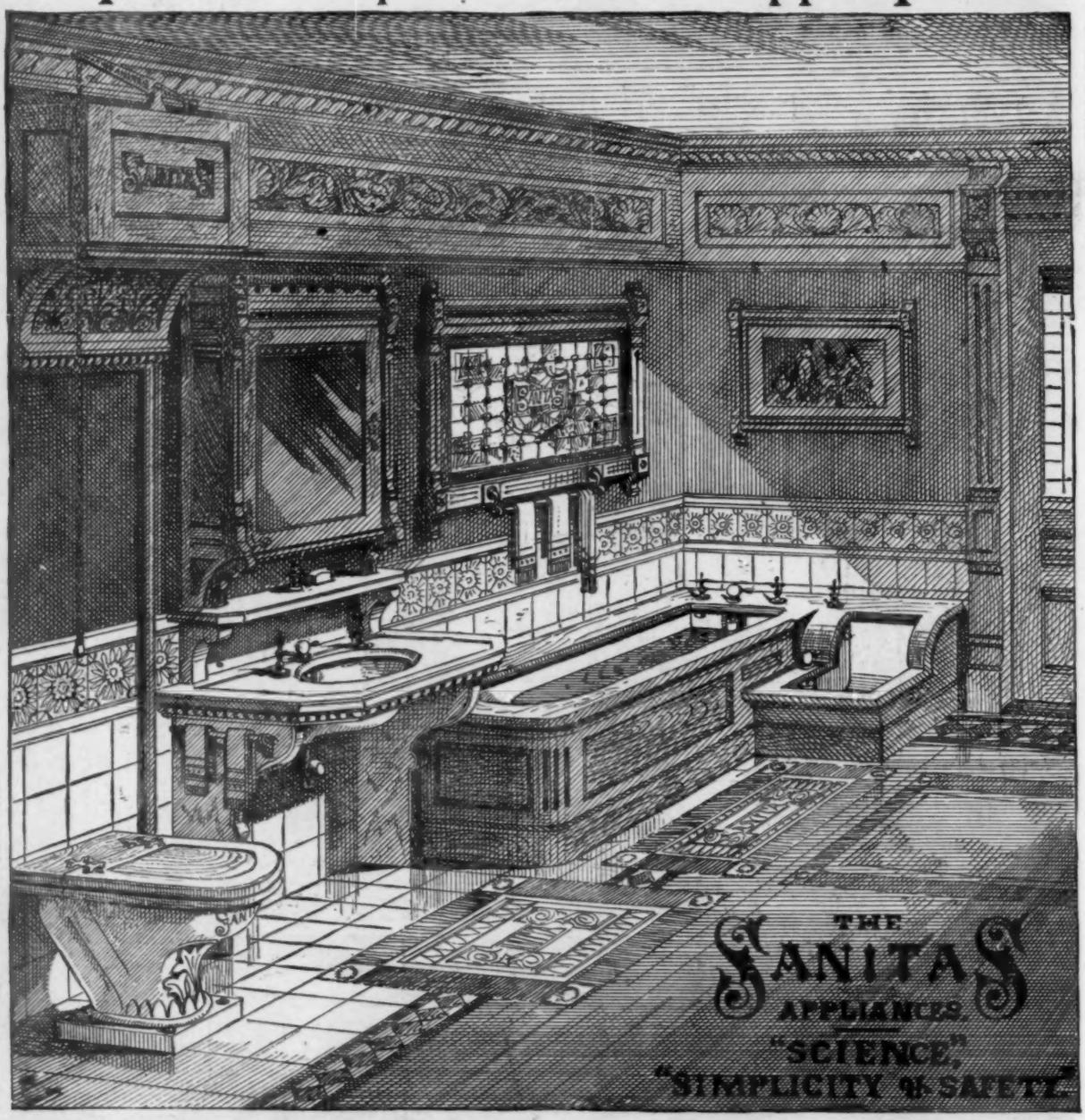
Editorial Summary.
Builders' Hardware.—XIII.
Annual Convention of the American Institute of Architects.
Mistakes in Architecture.—II.
Mediæval Houses.—VI.
Communications.
Notes and Clippings.
Trade Surveys.

ILLUSTRATIONS.

House of E. P. Bradbury, Esq., Boston, Mass.
[Gelatine Print issued only with Gelatine and Imperial editions.]
St. Paul's Church, Buffalo, N. Y.
Designs for a Wrought-Iron Gate.
The Palazzo Apartment-house, St. Paul, Minn.
House at Washington, D. C.

VIEW OF BATH-ROOM FITTED UP WITH THE

SANITAS ✿ PLUMBING ✿ APPLIANCES



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CONTENTS

SUMMARY: —
Omissions in Specifications. — The Responsibility of a Surveyor for the Correctness of his Quantities. — Liability for Careless Valuation. — The Latin Type of Dwelling-house. — Construction in South America. — How to Entertain Professional Societies. — Problems for Society Study. — How Bent-wood Chairs are made. — Progress of the Eiffel Tower. 237
BUILDERS' HARDWARE. — XIII. 239
THE PROPOSED CONSOLIDATION OF THE ARCHITECTURAL SOCIETIES. 240
ILLUSTRATIONS: —
House of E. P. Bradbury, Esq., Boston, Mass. — St. Paul's Church, Buffalo, N. Y. — Designs for a Wrought-iron Gate. — The Palazzo Apartment-house, St. Paul, Minn. — House of Senator Philetus Sawyer, Washington, D. C. 243
MISTAKES IN ARCHITECTURE. — II. 243
MEDIÆVAL HOUSES. — VI. 246
COMMUNICATIONS: —
The Tariff on Iron-beams. — Combustible Steam-pipe Coverings. 247
NOTES AND CLIPPINGS. 248
TRADE SURVEYS. 248

CERTAIN architects, in a place which we will not mention, were instructed to make plans and specifications for a house, to cost a certain sum, and to contain accommodations which could not possibly be provided for that sum. As we all know, this method of giving incompatible directions is very popular among clients, who are thereby enabled, whatever the architect may do for them, to resist paying his bill, if they happen to be so inclined, on the ground that he disobeyed some of the instructions, which he was, of course, obliged to do in carrying out the others; and, like the rest of us, the architects in question devoted themselves diligently to finding out what their patron really wanted. This was a house costing considerably more than the proposed sum, as they told him. Bids were obtained, the lowest of which was more than the client wished to spend, so he himself took the lowest bidder in hand, and with him modified the drawings and specifications so as to bring the cost of the building within his means. The architects were informed of this agreement, and requested to draw up contracts in accordance with it, which they did. When the outside of the house was done, the contractor notified the owner to send some one to paint it, as the painting was not included in the specifications, or in his contract. The owner, as usual, proceeded to the architects, and demanded that as they had forgotten to mention the painting in the specifications, they should pay for it themselves, which they declined to do. As it happened, their side of the case was complicated by the fact that they had inserted a clause at the end of their specifications, reciting that "all work necessary to the complete finish of the building should be done by the contractor without extra charge, whether specially described in the specification or not." The other builders who had estimated on the house told them that under this clause they had included the painting in their estimate, and the contractor told them that he should charge no more for painting the house at the stage where it had already arrived than if he had included it in his original estimate, so, as far as their work was concerned, they could not see how the owner had suffered any damage from the omission. As to the point whether the contractor, under the saving clause in the specification, was bound to do the painting, they took legal advice, in the owner's interest, and learned, what architects who depend upon blanket clauses should remember, that such a stipulation is with difficulty applied with special sorts of work not expressly mentioned in the specification, and that there was no probability that it could be stretched to cover the painting of a house. Apparently, the owner also took legal advice as to his claim on the architects, for he abandoned it, and paid for the painting himself, as he would unquestionably have been compelled to do if he had been so foolish as to carry the dispute into court. The law is perfectly well settled that the omission of anything from a contract or specification, by an oversight of the architect, renders him liable, at worst, only for the difference between the cost of doing it after the discovery of the omission, and what it would have cost to do it if it had been originally included in the specification or contract. In most cases this difference is nothing, and there is, therefore, no damage to be claimed; and even if there should be a real difference, and corresponding damage, the architect would not have to bear it unless the omission showed lack of reasonable care and skill. It should be remembered that the architect does not guarantee that his specifications are either full or accurate. "Heaven forbid," said the Lord Chancellor of England, "that a lawyer should be expected to know all the law," and an architect is no more to be expected to remember every item about a building, in writing his specification, than his counsel is to know all the law. If he makes glaring mistakes, such as architects of good ordinary skill and diligence would not make, he is liable for any damage that his employer may suffer in consequence, but that is the extent of his liability. The idea that an architect gives a guaranty to an indefinite amount with everything that he does or says, however hastily, is much favored by the persons who look on all business transactions as traps, by which weak or unwary people are to be caught and fleeced, but it has no sanction in the courts.

ON the contrary, a case recently decided on appeal in England has established the rule that even a quantity-surveyor is not responsible for the correctness of his quantities. In the case in question, a quantity-surveyor was employed to take out the quantities for a certain building, from the plans and specifications, and the tenders for the work were based on these quantities. It is the custom in England for the bidder whose tender is accepted to pay the surveyor's fee, and on the completion of the contract the surveyor, who had not been able to get his money before, brought suit against the contractor for it. The contractor refused to pay, setting up a counter-claim that, on account of the inaccuracy of the quantities, which were less in several instances than the actual amount of work required, he was obliged to do more work than he had estimated upon, and had suffered much damage in consequence. There was, apparently, reason to suppose that the contractor's claim was well founded, but both the lower court and the court of appeal refused even to listen to the evidence which he offered. They admitted the surveyor's witnesses, to prove that the custom was for the contractor to pay for the quantities, but barred out the counter-claim entirely, on the ground that the law was established that a quantity-surveyor did not guarantee his work, and evidence to prove its inaccuracy could not be admitted. It is true that the English architectural journals comment rather severely on this decision, and quote another, where an owner recovered damages from a surveyor who made his quantities too large, and thereby unduly enhanced the contract price; but the decision shows that if a surveyor, on whose data are based the contractor's figures, is not liable for mistakes in them, it would be preposterous to try to make an architect suffer for not being infallible and omniscient, where no damage could be shown to have resulted from his errors or oversights.

ARCHITECTS in this country do not often act as valuers in the way in which they are trained to do in England, but builders are sometimes employed by banks, insurance companies, and other lenders of money on real estate security to give estimates of the value of houses or other buildings, and it is well to know how far they are responsible for the accuracy of their estimates. In a case recently decided in England, and known as "Cann *vs.* Wilson," the defendants were employed by a man who had been asked to lend money on mortgage to make a valuation of the property on which money was to be advanced. The lender told the defendants what he wished the valuation to be made for, and also, apparently, told them how much he had been asked to lend on the estate. However that may be, the defendants, instead of inspecting the building and measuring the work and materials in it, assumed a figure from the plaintiff's statement, and sent it to him as their valuation of the premises. The plaintiff, relying on this estimate, made the loan as requested. The borrower did not pay his interest, and the mortgage was foreclosed and the estate sold. It brought less than the mortgage, and the lender, hearing something, apparently, of the way in which the valuation had been

made, sued the valuers for the difference between the price for which the estate sold and the amount of the mortgage. If the defendants had faithfully measured and inspected the building, and had given their honest opinion as to its value, there seems to be no question, judging from the example of the case cited above, that they would have been held harmless, even though their opinion might have been a very mistaken one; but in this instance the judge held that "they had incurred a duty toward the mortgagee to use reasonable care in the preparation of the valuation"; that they had "failed by their negligence to fulfil this duty, and were, therefore, liable for the consequences." Moreover, as the judge said, they had made a statement recklessly, expecting that it would be acted upon, and had taken no care to ascertain whether it was true or not. This, he considered, amounted legally to "fraudulent misrepresentation," and made them responsible for all damage resulting from their conduct.

IT is possible that the rapidly increasing intercourse between this country and the Spanish-American republics may have an important influence upon our architecture, which has hitherto been derived almost exclusively from English and Dutch prototypes. One of the first Latin habits to be domesticated among us will, we hope, be the use of the court-yard in city mansions. For small houses in closely built towns the slice of building, with a narrow front and rear, must, we suppose, continue to be employed; but for the city dwellings of rich people the entrance by a *porte cochère* into a private court-yard like that of a large Mexican or South American house, or a mansion in the Faubourg Saint-Germain in Paris, with its fountain, its orange-trees and azaleas, and its faithful concièrge to keep the gates closed against intruders, gives an air of aristocratic exclusiveness, as well as an impression of happy and well-bred home life, guarded from insolent intrusion, which is not conveyed by a much larger area on the outside of the buildings, as in the Vanderbilt or Stewart grass-plots in New York, or the doleful, high-walled front yards of the great London houses. There is one house in New York, the well-known Tiffany mansion, which boasts a court-yard and a *porte cochère*, with an iron gate, but the court is paved, and is so irregular in shape, and so dark and gloomy in appearance, that the principal source of enjoyment in it consists in the contemplation of its beautiful gate; and anything like a house "*entre cour et jardin*," after the Paris fashion, is as yet unknown here.

WITH the provision of a little touch of quiet, smiling nature in the middle of their houses, which is, we hope, reserved for the rich citizens of the future, should be introduced something of the Spanish-American construction. While our towns are being continually swept away by fire and replaced, a Mexican or South American city grows by accretion, such a thing as a conflagration being unknown. Even in Buenos Ayres, a city rivalling in population, wealth and enterprise almost any of those in the United States, a destructive fire is impossible. Although wood is used, as with us, for floor-beams, the floors themselves are of large, thin bricks, about thirteen inches long, laid on the beams, and covered with tiles set in mortar. This makes it next to impossible to burn through a floor, and the walls, which are of brick, without furring, wainscoting or bases, and with solid frames for windows built into them, are even more fireproof, so that a bonfire might be kindled in any one room in the house, with very little probability that the flames would extend farther.

EVERYTHING in the way of a suggestion for making the meetings of professional societies interesting is of value, and our entertainment committees might perhaps with advantage observe the doings of the Swiss and German associations of architects and engineers, and see if some of their devices for promoting mutual acquaintance cannot be acclimated here. Unlike the French, who view with horror the idea of admitting ladies to professional meetings, or the English, who invite them only to formal *conversaziones*, the Germans and Swiss make their relations with their professional brethren a source of pleasure for their families, as well as themselves. The architects and engineers of Berlin possess a spacious club-house, where entertainments of all kinds are given, and even the smallest societies manage to have frequent *soirées familières*, where the wives and children of the members meet, to be entertained with friendly gossip, and games, theatricals, or some other inexpensive amusement. There is no reason why these social occasions should not be extremely pleasant. As a rule, architects and their families accord very well in regard to education, tastes and income, so that the first essentials of pleasant social intercourse, mutual respect and sympathy, with the absence of any occasion for patronizing or envy, are provided for; and the rest would follow easily with a little effort. To any one accustomed to general society in this country, there would be a grateful relief in meeting a room full of people, all of whom could be depended upon to know that a Tintoretto was not something to eat, that the clerestory of a cathedral was not the same as the crypt, and that Queen Anne never saw a shingle, and none of whom would be either willing or able to crush their newly-made acquaintances by hints of their own enormous wealth. In such company, and only in such, can a man who loves his profession allow his mind to expand freely, and to find itself refreshed by the sympathy of others, and strengthened by the effort which he will make to deserve both sympathy and approval.

ANOTHER way which the Swiss societies have of making their meetings interesting and profitable is to choose as a subject for study and discussion some desirable municipal improvement, as, for instance, a scheme for a chain of parks, a bath-house, a street widening, or a new public building. At the worst, the study of a project of this sort is very useful to the members, who have the advantage of getting in one evening an amount of expert instruction on the subject which they could not otherwise accumulate by a month of reading and inquiry in case they should be suddenly called upon to undertake a work of the kind; and in many instances the results of the deliberations of a body of specialists would be regarded with great curiosity by the municipal officials or by public-spirited citizens, and, if the time were favorable, might be carried out.

WE have all seen the beautiful Austrian bent-wood chairs and furniture, which owe their popularity, perhaps, as much to their charming design as to their strength and durability; and most of us have had some curiosity to know how they were made. The *Revue Industrielle* explains the matter — at least, so far as the processes could be observed at the industrial exhibition at Budapest. Within the last few years the methods of treating the wood have been improved, and the application of the material much extended; carriage-wheels, for instance, having their rims made of a single piece of ash or oak, bent to a circle, with great advantage in point of strength and cheapness over those made with felloes sawed in small sections out of straight pieces of wood. The material to be bent is, for furniture, usually red beech, which grows very abundantly in the Hungarian forests. The timber is sawed into strips one and one-half to two inches square, according to the work for which it is intended, and then turned in a lathe into smooth, round rods. These rods are placed in an air-tight case, where they are exposed for fifteen minutes to the action of superheated steam. They are then so soft and pliable as to be easily bent by hand, and are in this condition fitted to iron patterns, well secured, and left to dry. The drying takes from two to eight days, according to the size of the piece. When it is complete, the wood is detached from the pattern and is ready to be joined with other pieces, varnished, polished, and sent out in the shape of finished furniture.

THE great Eiffel tower in Paris, notwithstanding all the rumors about difficulties in its construction, has, at the last advices, reached a height of five hundred and fifty-three feet, and is therefore the highest structure in the world, being three feet higher than the Washington Monument. Its growth from this point will be very rapid. Even now, the gang of one hundred and forty men employed on it carry it forward at the rate of more than three feet a day, and as the diameter of the shaft diminishes it will develop faster vertically. A few days ago there was really some trouble with the men, who pretended to be frightened at the height at which they had to work, but a financial remedy soon relieved their fears, and they now find no reason for apprehension. If the weather continues favorable, the tower will be complete by the first of January. Although it is as yet little more than one half its intended height, eight-ninths of the ironwork has been put in place, and the slender open shaft which forms the rest will be quickly finished.

BUILDERS' HARDWARE.[1]—XIII.

SASH-BALANCES.

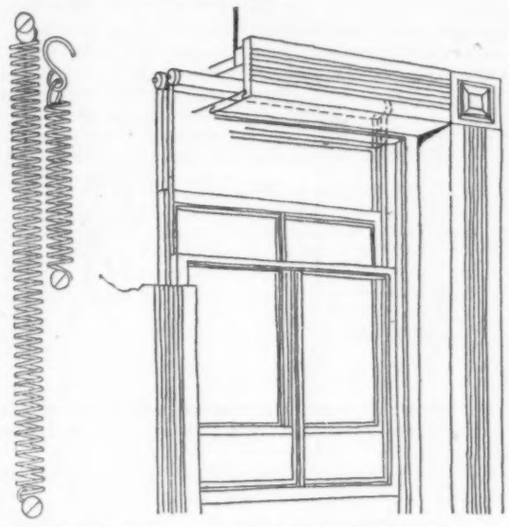

Fig. 173. Anderson Sash-balance. Wm. G. Anderson.

Fig. 174. Ormsby Sash-balance. Ormsby Sash-holder Co.

THE inconveniences attending the use of weights and pulleys for raising sashes, while in most cases due to bad workmanship in setting the pulleys and imperfect arrangement of the boxes rather than to any intrinsic deficiencies in the system, have given rise to several so-called sash-balances, which are intended to permit of weights, boxes and ropes being entirely dispensed with. Indeed, the natural outgrowth from the idea involved in the "Acme" sash-cord would be that a plain spring could be made to answer the purpose of both weight and cord. This has been done with the "Anderson" sash-balance. Figure 173, which consists simply of a steel, spiral spring for each sash, from $\frac{3}{8}$ inch to $\frac{1}{2}$ inch in diameter. The springs are fastened to the hanging-style of the window-frame and to the sashes, and are made of just sufficient strength to sustain the sash in any position, so that a very slight exertion is sufficient to move it either up or down. The springs are made the same length as the sash; and, being secured near the bottom of the sash, are drawn out to twice their length when the sash is down. When a sash is hung with this kind of balance, it has to be fitted with some form of self-catching sash-fast, as otherwise the window might fly open as soon as the hand was withdrawn. Anderson uses the "Attwell" sash-fast for this purpose, which will be described in a subsequent chapter, though any other self-locking form would answer equally well. The retail price for the four springs necessary for two sashes weighing fifteen pounds each, is $1.35. For forty-pound sashes the price is $2.50, and other sizes in proportion. When the sashes weigh over fifty pounds, the size of the spring required becomes so large as to render it rather too conspicuous for ordinary use.

The "Ormsby" sash-balance, Figure 174, is on exactly the same principle as the ordinary shade-roller, consisting of two strong spring-rollers which are concealed in a pocket over the window-head, the sashes being suspended therefrom by thin brass bands which coil around the roller. The price of this sash-balance varies from 75 cents for a window with fifteen-pound sashes, to $1.75 for fifty-five pound sashes.

Fig. 175. Shumard Sash-balance. Coleman Hardware Co.

A third type of sash-balance is illustrated by Figure 175. This has the general appearance of an ordinary sash-pulley, being mortised into the hanging-style in the same manner. Inside of the pulley, however, is coiled a strong band-spring of steel, attached to the axle, which is fixed, and to the outer edge of the wheel, in the groove of which is wound a narrow brass ribbon serving instead of a sash-cord, so that when the sash is drawn down, the ribbon is uncoiled and the spring acted upon. The spring can be set to any desired tension, and its action can further be regulated by a brake on top of the wheel, which is tightened or loosened by turning a screw in the face-plate.

The "Shumard" sash-balance is made for runs of from thirty-two to forty-six inches, and for sashes of from eight to forty pounds' weight. The price per pair, for a sixteen-pound sash, is $1.40; for a forty-pound sash, $3.25 per pair, and other weights in proportion.

One advantage which all of these spring-balances possess is, that they act most strongly when the sash is down, enabling one to move a binding window more readily than if it were hung with ordinary weights and cords, while, when the sash is up, the springs barely suffice to hold it in position and do not offer resistance to drawing down, as is the case with weights. The objection, of course, is, that the springs are in constant tension, and will, in time, loose their elasticity. They can be replaced quite as easily as worn-out ropes; still, most people seem to prefer the old-fashioned weights and pulleys.

SASH-CORD ATTACHMENTS AND WEIGHTS.

There are several devices for attaching the cords to the sashes. The commonest method is to cut a groove on the side of the sash with an enlargement towards the bottom, and then simply knot the end of the cord, the knot holding in position. It is better to use some form of sash-cord iron. Figure 176 is one of the simplest forms. It is mortised into the side of the sash and held in position by a screw, the sash cord being knotted under the hook. This form retails at 35 cts. per gross. Figure 177 illustrates an iron used when the sash is hung with two cords on each side. This retails at 52 cents per gross.

Fig. 176. Sash-cord Iron.

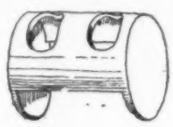

Fig. 177. Double Sash-cord Iron.

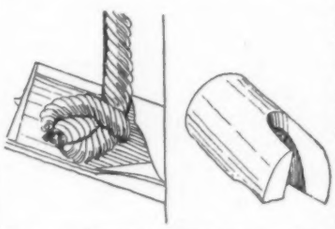

Fig. 178. Jackson's Sash-cord Iron. Ireland Mfg. Co.

Figure 178 is a form quite similar to Figure 176, though requiring a deeper mortise and being driven in on a slant, so that it cannot work loose. It retails at $1 per gross. Figure 179 is different from either of the preceding forms, consisting of a cartridge-shaped cylinder, closed at both ends, but with an opening at the top and the bottom, through which the cord is passed and wedged by the eccentric cam shown by the figure. The cord is released by inserting a wire, as shown. This fixture retails at $1.60 per gross.

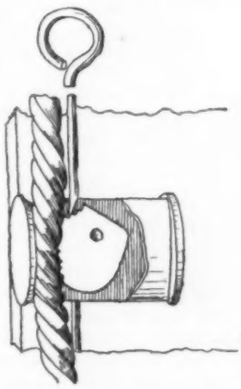

Fig. 179. Rodgers Sash-cord or Chain-fastener. Nimick & Brittan.

Fig. 180. Raymond's Sash-weight. Raymond Lead Co.

Sash-weights are usually made of cast-iron, to order. They are cast in plain round-bars with an eye at the top, substantially as has been shown in Figure 170. When the sashes are very heavy, or the space for the box is restricted, lead weights are used, as they occupy less space than iron. They are usually made to order, and can be had in any desired shape, but are manufactured in regular weights by a few of the lead-works. Figure 180 is the form adopted by the Raymond Lead Company. Each section is cast on an iron rod extending through the weight, with a hook at one end and an eye at the other, so that as many sections may be hung to each other as may be necessary.

[1] Continued from page 229, No. 673.

Iron sash-weights cost 1½ cents, and lead-weights from 6 to 7 cents per pound.

SASH-LOCKS.

Sash-locks may generally be said to be devised for the moral encouragement of the faint-hearted, who cherish a fond belief that when the lock is turned no intruder can possibly enter through the window. Most of the forms in the market are sufficient protection against a sneak-thief, but while nearly every sash-lock in existence is claimed to be strictly burglar-proof, and advertised as such, the burglar must be a novice, indeed, who would let even the best of them keep him out of a house. When the window is secured with a fast which cannot be opened by slipping a knife-blade between the meeting-rails and pushing back the bolt, an enterprising burglar would simply break out a pane of glass, which can be accomplished with less noise than is made in picking a lock; so that, after all, the protection afforded by a sash-lock is more in sentiment than in fact. Still, that the timid be cheered and the stray tramp kept out of the silver closet, some form of sash-lock is always considered a necessity for all windows.

The requirements of a perfect sash-fast or lock, are that it shall fulfil the following conditions:

First, it must be so constructed that it cannot be opened from without by a knife, or by jarring the window. Second, it should, in closing, draw the two sashes tightly together, and, at the same time, should not be affected by any small inequalities of adjustment. Third, it should always remain either open or shut, with some sort of spring-contrivance to hold the lever in position, so that it will not be possible to leave the lock partially turned, thereby running the risk of breaking the muntins when the window is raised. Fourth, it should have no projections which could possibly tear the sash; and fifth, and perhaps most important of all, it should be simple in construction and in its operation.

It is not essential, though it is generally very well that the fast should be self-locking. It is not well to trust to anything which acts by gravity, or which depends on any perfectly fitted sash, as such appliances are apt to get out of order. It also is well that the lock should be as inconspicuous as possible, though neither is this essential. Some sash-fasts are provided with rebated appliances which fit down between the two sashes; this is not necessary, though it is perhaps a greater security, as in this way the fast can be more securely screwed onto the sash. In selecting any form of rebated sash-fast, however, it must be borne in mind, that sashes are made differently in the East and in the West. In the vicinity of Boston, it is customary to rebate the meeting-rails where they come together, but elsewhere, we believe the meeting-rails are usually simply bevelled.

Much ingenuity is to be observed in the line of patents for sash fasts and locks. This might be interpreted as an indication that either the sash-fastenings at present in the market are quite insufficient for their purpose, or that there is an extraordinary necessity for the species of protection which such contrivances can afford. This chapter, however, will but faintly indicate the variety of devices having in view the securing of sashes. One must wade through the list of Patent Office reports in order to fairly appreciate what has been done in this direction. A great many of these inventions never get beyond the Patent Office. Still, there are all sorts and kinds of sash locks and fasts in the market. Each one appears to be covered by a patent, yet somehow or other, the best locks and fasts are to be found in the catalogues of nearly all the manufacturers, so slightly disguised it is easy to see that such ideas are in a measure common property.

The terms sash-lock and sash-fast have been used synonymously, though a distinction should be observed between them. A sash-lock is understood to be some contrivance which actually locks a sash by means of some form of key. All of the other numerous devices which, by means of levers, catches or springs hold the sash either open or shut, are technically termed sash-fasts. The distinction, however, cannot be rigidly adhered to. Nearly all of the self-locking fasts might be classed with sash-fasts, while, with equal propriety, the sash-locks can be said to possess the essential qualities of sash-fasts; though, with very few exceptions, all are designated by the hardware dealers, as sash-fasts.

Figure 181 illustrates a form of sash-lock which is secured to the face of the sash, the bolt working into staples at intervals in the window-frame or stop-bead. The bolt work with a spring, so as to be self-acting, and by means of the key it can be locked, thus permitting the sash to be left partly open and secured against intrusion. This lock is light and strong, and well adapted to be used on screens as well as sashes.

Figure 182 is a type of several varieties of sash-locks which mortise into the sash and throw out a bolt in the same manner as an ordinary door-lock. In this example the bolt works with a spring, which makes the lock self-acting after the bolt has been thrown; that is to say, if the bolt were pushed back it would not remain closed until the knob or handle were turned. This lock may be operated with either a movable key or a flat knob or button.

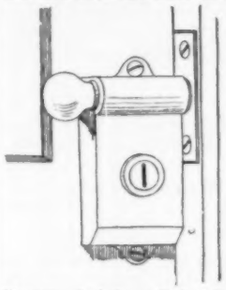

Fig. 181. Sash-fast. Yale & Towne Mfg. Co.

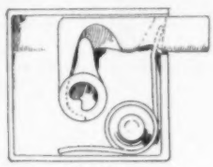

Fig. 182.

Of course, any mortise drawer-lock can be applied to a sash, if desired, or any other lock sufficiently narrow to fit the thickness of the sash, though the two forms just described are about the only ones especially made for windows, which can properly be termed sash-locks.

[To be continued.]

THE PROPOSED CONSOLIDATION OF THE ARCHITECTURAL SOCIETIES.

THE discussion that attended the introduction of the committee's report on the consolidation of the architectural bodies during the second day's session of the Convention of the American Institute of Architects, at Buffalo, was as follows:

Mr. Littell.— I ask for the admission of the report of the Special Committee to consider the report on consolidation. I ask for general consent to introduce this before we take up any other business. General consent having been given, Mr. Littell proceeded as follows:

The Special Committee to consider the report of the Committee on Consolidation entered upon its labors, and found it would require a very long time to fully work out a plan or suggestion in connection therewith, but your Committee unanimously agreed to present to this Convention a provisional report on a different line from that suggested in the report of the original Committee. Your Committee propose to retain Article 1 on page 2, as amended last night, Article 2, also as amended last night; to strike out Section 3, and for Section 4 substitute as follows: "Associations in States or parts of States may be formed with the approval of the Convention of the American Institute of Architects, with power to make laws and regulations for their own government. The local societies called Chapters of the Institute may be formed with similar powers, but in all cases the standard for admission into these subdivisions must be, at least, as high as that fixed by the Constitution of the Institute, and they must not conflict with the requirements of the body in which they are included. No person shall be elected to the Institute who shall not previously have been elected a member of the local society covering the territory in which the candidate resides."

It is then proposed to strike out Sections 5, 6, 7 and 8, and to amend Section 9 to read as follows: "The Convention of the Institute at large shall be annual. Unless ordered otherwise at the previous Convention, it shall be held in the official metropolis of the nation, the city of Washington."

It is proposed to strike out Sections 10, 11 and 12, and substitute

for Section 12 as follows: "The American Institute of Architects shall have two grades of membership, Associates and Fellows, as defined by the Constitution of the present Institute. The Western Association may elect at a day previous to the proposed reorganization as many of its members to the grade of Fellow in the American Institute of Architects as there shall be Fellows in good standing in the present Institute at the date of reorganization, and all other practising members of each society shall enter the new Institute as Associates. After reorganization, no person shall be eligible to the grade of Fellow unless he shall be at the time of balloting an Associate, or unless he shall receive the unanimous vote of the Institute in convention assembled."

Then it is proposed to strike out Section 13, and substitute for Section 14 as follows: "The officers of the American Institute of Architects shall hereafter be a president and as many vice-presidents as there are chapters, an honorary secretary, a general secretary, a secretary for foreign correspondence, a treasurer, and a board of trustees. The board of trustees shall consist of the above-named officers and twelve members; the twelve members to be selected at the time of organization, shall serve, four for three years, four for two years, and four for one year; and thereafter four members shall be elected at each annual convention to serve for the term of three years." Section 15 remains substantially as drawn. Section 16 is stricken out, and the final clause is as follows: "These provisions shall take effect when ratified by a two-thirds vote of all professional members of the American Institute of Architects, and a two-thirds vote of all professional members of the Western Association of Architects, but when the same person is a professional member of each association, his vote shall be counted as only one-half a vote."

Mr. Cutler. — In regard to the Fellows of the Western Association, the proposition of the Committee is that the Western Association may elect to the grade of Fellow in the new Institute as many of its members as are at present Fellows of our Institute.

Secretary Bloor. — I move that Mr. Carlin, the Buffalo member of the Committee of Arrangements, be requested to have Mr. Littell's report printed at once and distributed, and that the consideration of it be made the special order of business for to-morrow morning.

Mr. Littell. — This is not a perfect scheme; it is merely an outline. To perfect the scheme will require weeks of work. We all want information, and want to see which direction the Institute prefers to move in.

Mr. Adler. — I think we would get on just as well if this committee were made permanent until the next Convention, and if it were directed, as was the committee which preceded it, to coöperate with the corresponding committee of the Western Association. I should, perhaps, like to see, if possible, this consolidation effected practically before the annual conventions of 1890 of the two organizations, and it appears to me that if these two committees will go to work at once, and will within three months from now — I think it can be done within that time — or within six months, at the latest, formulate definitely the scheme of unification, and if this report were printed and a copy sent to each member of both organizations, and, next, if one of two things were done — either to call an extra session of each body to consider the project of unification; or, what I believe to be better still, to make preparations for a letter ballot. It will be impossible to get a two-thirds vote of either the Western Association or of the American Institute at any convention, because we cannot get two-thirds of our members together. I don't know whether it is practicable under the statutory limitations of the Institute to resort to a letter ballot, but, if it is possible, that would be the only effective way to arrive at a conclusion, and, before making a motion that I contemplate, I would like to ask Mr. Bloor whether we can, under the present Constitution and By-Laws of the Institute, determine upon any action by letter ballot.

Secretary Bloor. — I don't recollect any provision in the By-Laws which would prevent the use of a letter ballot and it certainly is the most convenient, and I think the only practical, way of getting at the sentiments of the whole Institute. Unless we find something in our regulations showing that we cannot do this I will withdraw my previous motion and second Mr. Adler's motion just made.

Mr. Stone. — Before putting that vote I think it would be a good idea to get an expression from this meeting. If this convention thinks the thing we have proposed is all wrong we would like to know it. If they think on the whole it is in the right direction it will be a practical endorsement of the general idea which is embodied in the report, and if any further questions were asked some of us would try to answer in regard to the matter, or a more general outline could be made of what the scheme is.

Mr. Kendall. — It seems to me that the proposition to have the meetings annually is one of the very best propositions of the scheme. If we should meet only once in three years I think that would be the beginning of the end. We have got to get together every year in order to keep up the interest in our work, and I don't think by sections meeting in their own locality every two years and then meeting altogether every three years that that is the way to keep up our interest in the work, and I think the meetings must be held once a year in order for us to feel the importance of our work and take the interest in it which we should.

A Member. — I think the meetings should be held in different States as it will afford a change and give an opportunity for local architects to interchange hospitalities and civilities, and I don't think if we always meet in Washington it will serve the same end. One of the great inducements of our coming together is to visit different places.

Mr. Stone. — We provide for their meeting in Washington simply in case they don't meet anywhere else, or in case there is no other place appointed.

Mr. Nickerson. — I understood it was to be in Washington unless it was provided at a previous meeting where it should be held.

Mr. Adler. — I think the difficulty about that has always been due to the fact that the attendance at the conventions of the Institute has been very limited and also to the habit of the Institute always to lean upon its board of trustees and not dare to take any initiative action. Now we have no trouble in the Western Association in determining where our next yearly convention is going to be, and you can make up your minds, if you only will emancipate yourselves from the idea that it is not your duty to make up your minds, but it is your duty to remain in a state of infantile dependence upon your superiors.

Mr. Cutler. — I am quite sure I voice the sentiment of this committee when I say it was the intention that this board of trustees proposed in this report should merely have the control of the Institute at such times as the Institute was not assembled in convention; that the convention would have full power to decide upon the place of meeting, or any other question which might come before it, or direct the trustees. I am entirely in favor of going here and there and everywhere in the country. I want to go to San Francisco, and I want to go to Kansas City, and I don't wish to go always to Washington.

Mr. Gibson. — Most of the changes made in this report are different in the matter of Chapters; that is, the Chapters should not be limited one to each State. Some States will require two, and others will not be able to support one Chapter. In the matter of Fellows and Associates, I agree with it perfectly, and I may remind you that I, last night, proposed a similar scheme, namely, that the Western Association should choose from among its members an equal number of Fellows to be Fellows of the new Institute with the number of those in the American Institute of Architects at the present time. I think both of these changes are better, and I think the committee will find that this meeting generally indorses their actions.

Mr. Adler. — I offer the following resolution:

Resolved, That the committee of the American Institute of Architects upon consolidation of architectural associations be continued, and that it be directed to act with the corresponding committee of the Western Association in determining a definite plan of consolidation within the next six months. It is further

Resolved, That when this plan of consolidation has been determined upon and approved by the boards of trustees and directors of the A. I. A. and W. A. A. the same shall be printed, and copies of the same distributed among the practising members of both bodies. It is further

Resolved, That within one month from the distribution of these printed copies of the committee's report there shall be a letter ballot upon its adoption by the practising members of the A. I. A. and W. A. A., and that if approved by a two-thirds vote of both bodies it shall be declared adopted, and the two bodies consolidated under its provisions. The board of trustees of the A. I. A. and the board of directors of the W. A. A. shall, in case of such adoption, at once issue a call for a convention of the members of both bodies, to be held at such place and at such time as may then seem most expedient, and a reorganization of the A. I. A. shall be the order of business of said convention.

(Motion put and carried.)

REPORT OF THE SPECIAL COMMITTEE ON CONSOLIDATION.

TO THE AMERICAN INSTITUTE OF ARCHITECTS:

At the last Convention the following resolution was unanimously adopted:

Resolved, That a Committee of five members be appointed, of which the Chairman of this Convention shall be a member, *ex-officio*, the other four members to be selected by him, to act jointly with one of similar number appointed by the Western Association of Architects at their next general meeting, and to report as to the best and speediest method of consolidating all the Architectural Societies of America into one organization; the report to be full regarding form and constitution for local societies, and also regarding form, constitution, permanent place of meeting and proper quarters for the national, or representative, body. That the Western Association of Architects be and they are hereby cordially invited to unite with us in this work, and to appoint a Committee as above.

The other four members appointed by the Chairman, Mr. Kendall, to serve with himself, were Messrs. Burnham, of Chicago; T. P. Chandler, Jr., of Philadelphia; T. M. Clark, of Boston, and Bloor, of New York.

Since a formal preliminary meeting in December, at which all the members were present except one, and at which a skeleton report was adopted as the basis for consultation with the corresponding committee of the Western Association of Architects, consisting of Messrs. Adler, of Chicago; Ferry, of Milwaukee; Carlin, of Buffalo; A. Van Brunt, of Kansas City, and Root, of Chicago, the work of your Committee has been carried on partly by personal interview, but mainly by correspondence between Mr. Adler, of Chicago, a member of the Institute as well as of the Western Association of Architects, and the Chairman of the Association Committee, and Mr. Bloor, the Secretary of the Institute Committee, and the result of their labors and communication with their respective committees is the following project looking toward that Association being, in the future, united with the Institute, for the good alike of each Society, of the profession and its art, and of

the American public, in name and organism no less than, as heretofore, in spirit, aims and mutual helpfulness, while at the same time it indicates what is believed to be a practical method by which all other American architectural societies may receive the greatest associative benefit possible to themselves, by being partakers in the historical and national and international prestige of the American Institute of Architects, the mother and pioneer of them all, as of all the able and useful serial literature representing the profession and building interests in the various sections of the Union — that experienced body whose constitution and ordinances have already been virtually adopted by all of these Societies as far as the differences between national and sectional conditions would admit, while its schedule of fees and recommendations for professional practice, in their main items, now over thirty years old, and directly the basis of the business and social standing — and indirectly the basis of the artistic standing of the profession — have invariably been adopted *verbatim et literatim*.

It is a proof of the wise choice made by the Committee of the Western Association of Architects, in leaving to Mr. Adler the correspondence on this important topic, that he, carrying his Association with his broad-minded views, has met the claims which, as the society of old standing, of large experience and of exclusively national aims, the Institute has felt itself called upon to make, in a spirit of recognition and comity, and that some of the best provisions proposed as to organization were formulated by himself.

Before reducing the suggestions of your Committee to items, we beg, on the difficult subject of a practical standard of professional requirements in candidates for membership, to quote bodily the following remarks submitted last year to the Western Association of Architects by Mr. Louis H. Sullivan, the Chairman of a Committee of members of that body to whom the question had been committed. This question has been one of frequent formal or informal discussion in the Institute, and is indeed as old as the history of art societies in any epoch or country; but the grounds of it, and the perplexities involved in it, have never, so far as our observation goes, been expressed with greater terseness and lucidity than by him.

"The difficulties which arise in connection with this subject are manifold and perplexing. If the standard for admission to membership be fixed with sole regard to what is supposedly an ideal, the numerical growth of the Association would be seriously checked and its usefulness in many ways impaired; for it is evident that such a policy would preclude the admission of those of average capacity, and of the many bright ones who are contending against the difficulties which beset a beginner.

"On the other hand, if the standard be fixed so low as to make possible the admission of all, it is evident that the standard of the Association would degenerate, and, through the prevalence of a low tone, its influence for good would cease and its career be short-lived.

"It is assumed by your Committee that the policy of the Association in this regard should be broad and democratic; that it should not set up factitious barriers against those who ask for admission; that the Association wishes to count among its members every thoughtful, earnest, ambitious man in the profession; that it desires its strength and stability to be derived from the standing and capacity of the average man; that it welcomes the fervor of youth; that it cherishes the honorable record of old age; that, above all, it should not place its standard for admission higher than it is itself prepared to exemplify.

"It is assumed, as a paramount consideration, that the applicant's record, be it short or long, should prove honorable; second, that he evidence fair artistic, constructive, or executive skill; third, that his admission shall necessitate an expressed pledge upon his part to sustain by individual effort a sound standard of professional bearing."

It is understood that the same gentleman is chairman of a committee (supplementary to and complementing that on requirements in candidates), which is now engaged on a Code of Ethics for professional practice in the nature of an itemized declaration to candidates of the rules by which they will be expected to govern themselves. It will necessarily be but an itemized formulation of the brief rule which for thirty-one years has made "the condition of membership" in the Institute "the honorable practice of the profession," but it will be awaited with interest by all intelligent and public-spirited practitioners.

The following are the items of the formula now submitted to your consideration and discussion:

1. The name of the proposed Federation shall be "The American Institute of Architects."

2. Any Architectural Association which shall adopt the "condition of membership" which has prevailed in the American Institute of Architects, viz.: "the honorable practice of the profession," may become a part of the new organization.

3. For the purpose of securing greater convenience of administration, the Institute shall be divided into three Sections, viz.: (*a*) the Eastern Section embracing all the New England States, other States lying on the Atlantic Ocean, and the States of Pennsylvania, West Virginia and Ohio; (*b*) the Central Section embracing the region westward of the above as far as the Western boundary lines of the States or Territories of Dakota, Nebraska, Kansas, Indian Territory and Texas; and (*c*) the Western Section, embracing the region westward of the last mentioned section to the Pacific Ocean. These three Sections shall be again divided into State Associations, and the State Associations may be subdivided into local organizations at their own pleasure and convenience.

4. The State divisions shall be called Chapters of the American Institute of Architects, and the sub-divisions of these State Chapters may be called Lodges thereof, and said divisions and sub-divisions shall be free to make laws and regulations for their own government, excepting only that the standard of admission to membership must be at least as high as that fixed by the Constitution of the Institute, and that they shall not conflict with the regimen of the body in which they are included.

5. There shall be an Annual Convention of each of the three Sections. The members of all Chapters within the limits of each Section shall be entitled to seats in such Convention, but in voting, an apportionment of votes proportioned to the number of members of each Chapter shall be made, and the members of each Chapter present at such convention shall cast the votes of their respective Chapters.

6. The officers of each Section shall be a President, a Vice-President, a Treasurer, a Secretary and five Trustees. These nine shall constitute a Board of Trustees, who may, for convenience of administration, elect from their Board an Executive Committee of three, which between the meetings of the Board of Trustees, shall have all of the powers of said Board.

7. The President, Vice-President, Treasurer and Secretary, shall be elected each to serve one year. Of the five Trustees first elected, two shall be elected for one year and three for two years. And after this, successors to the Trustees, whose terms expire, shall be elected each time for a term of two years.

8. The duties of these officers shall be as is customary for officers bearing these titles in similar organizations.

9. The conventions of the Institute at large shall be triennial, and, unless ordered otherwise at the previous convention, shall be held in the official metropolis of the nation, the City of Washington. The right of participation in the deliberations of these Conventions, and the assignment of votes to individual Chapters, shall be the same as at the Conventions of the Sections.

10. The newly-organized Institute shall be deemed formed whenever its organization shall have been agreed to by a two-thirds vote of all the professional members of the present American Institute of Architects, and by a two-thirds vote of all the professional members of the Western Association of Architects. But when the same person is a professional member of both the Western Association of Architects and the present Institute, his vote shall be counted as only one-half.

11. As soon as such votes shall have been had, the officers of the American Institute of Architects and of the Western Association of Architects shall hold a joint meeting, and shall issue a call to the members of the Western Association of Architects, and to the members of the American Institute of Architects, fixing a date for the convention, and inviting to said convention all of the members of the two organizations before mentioned, as also all members of all other architectural associations of good standing throughout the United States. At this convention the constitution shall be adopted, based substantially upon the principles herein set forth. And at this convention the voting power of the different organizations represented shall be proportioned upon their actual membership, and shall be exercised in behalf of each association, prorated as above stated, by the members present to represent the same.

12. Inasmuch as the present American Institute of Architects and other architectural societies affiliated with it or otherwise, have two grades of professional membership, while the Western Association of Architects and others have but one, only those Fellows of the Institute who have been in good standing for ten years or over shall retain the title of Fellows, all others entering the new organization as Associates. But at this convention there shall be elected, by ballot of all the professional members, a number of Fellows not to exceed in number one-twentieth of the entire membership outside of the old fellowships of the new organization. And in counting votes the names of those who are members of more than one of the old organizations shall be counted but once.

13. At each subsequent Triennial Convention of the newly organized Institute there shall be elected, by general and by letter ballot of all Associates and Fellows, additional Fellows to the number of one-twentieth of the existing lower grade professional members.

14. The officers of the American Institute of Architects, as newly organized, shall be a Board of Trustees embracing in its membership all of the officers of the three Sections, and from among these the Convention shall elect a President, Vice-President, General Secretary, Secretary for Foreign Correspondence, Treasurer and three others who shall be Trustees, who shall all hold office for three years, or until their successors are appointed, and who, by virtue of such election to the Executive Committee of the American Institute of Architects, shall remain Trustees of their respective Sections, until the next triennial convention of the American Institute of Architects.

15. The duties of these officers shall be as is customary in similar organizations. The General Secretary, Secretary for Foreign Correspondence, and Treasurer, shall be salaried officers, the amount of their salaries to be fixed in proportion to the revenue left after providing for expenses of publication, rent and other current outlay, and the General Secretary to be paid on the basis of the fact that if his work be adequately done, it must necessarily absorb all, or nearly all, of his working time.

16. In the year of the occurrence of the Triennial Convention of the Institute, the annual Conventions of the Sections shall be merged into the meeting of the Institute; the members of the Sections during such Conventions constituting themselves a sub-convention for the election of officers for the ensuing year, and such other business as may be peculiar to their Sections and not included in the transactions of the Convention of the Institute.

At each Triennial Convention there shall be an exhibition of the work, since the last convention, of professional members, and a jury of seven members, four of whom shall be of the higher grade, shall be appointed to adjudicate on the merits of the renderings exhibited; and a gold medal, inscribed with the name of the Institute and of the party to whom it is given, shall be awarded by said jury to the most approved design; and a silver medal, similarly inscribed, shall be appropriated for the design adjudged the next best.

When a large membership and consequent sufficiency of revenue shall warrant it, the Institute shall, with safeguards and under conditions to be prescribed by the Governing Board, undertake the defence in law of its members against injustice, in cases involving principles of general interest to the profession.

The question of increased revenue for the Institute, apart from the last conditional proviso, and for general purposes, was specifically referred by the last convention to this Committee, which sees no other immediate means of increase than raising the annual dues of members to the same amount, or approximate thereto, assessed in former years;

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ST PAUL'S CHURCH, BUFFALO, N.Y.
VIEW OF BUILDING AS NOW BEING REBUILT.

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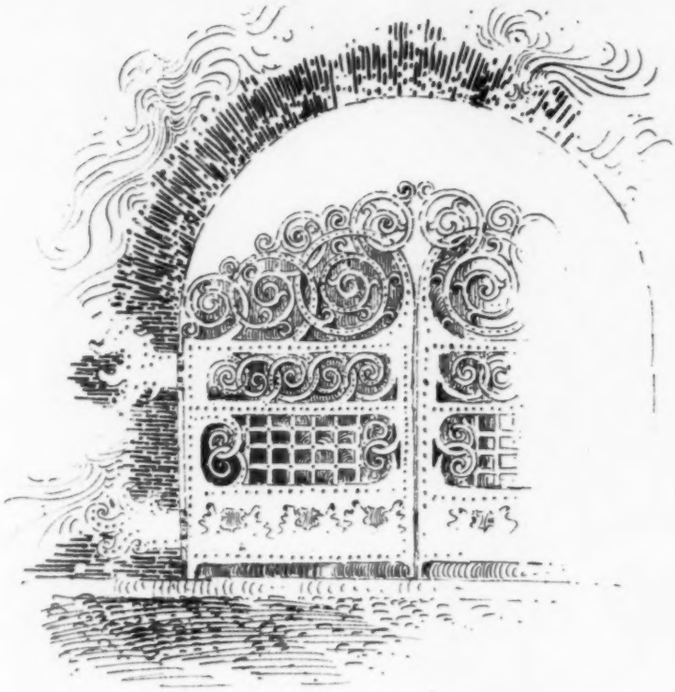
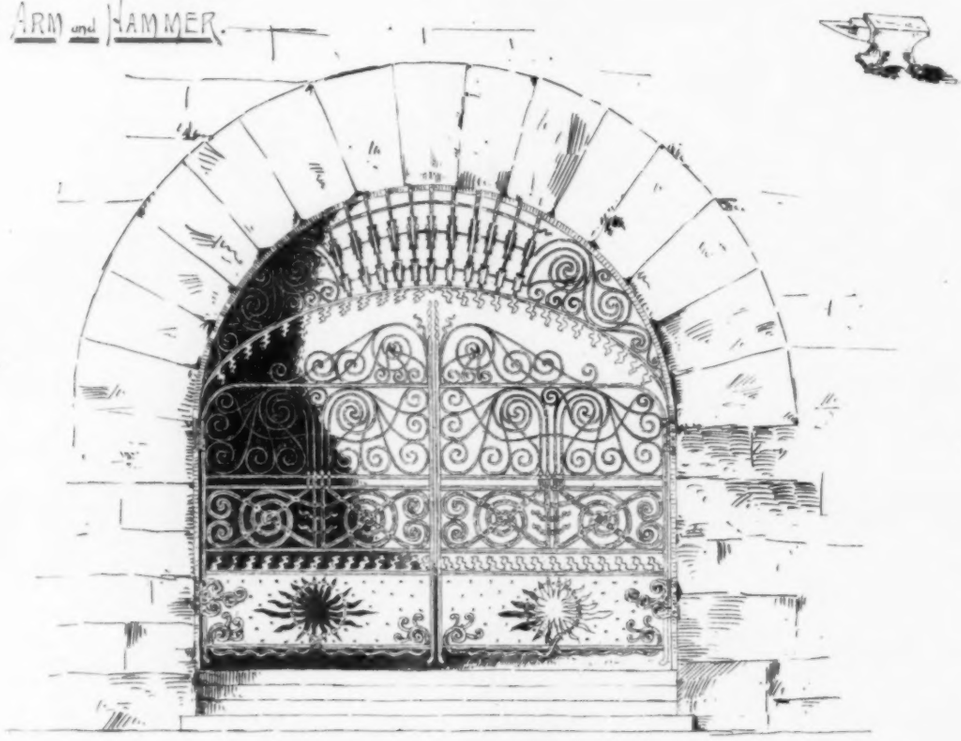


Submited by, Quill Pen.

R. A. S. C. Competition for a wrought iron gate

by ARM and HAMMER.



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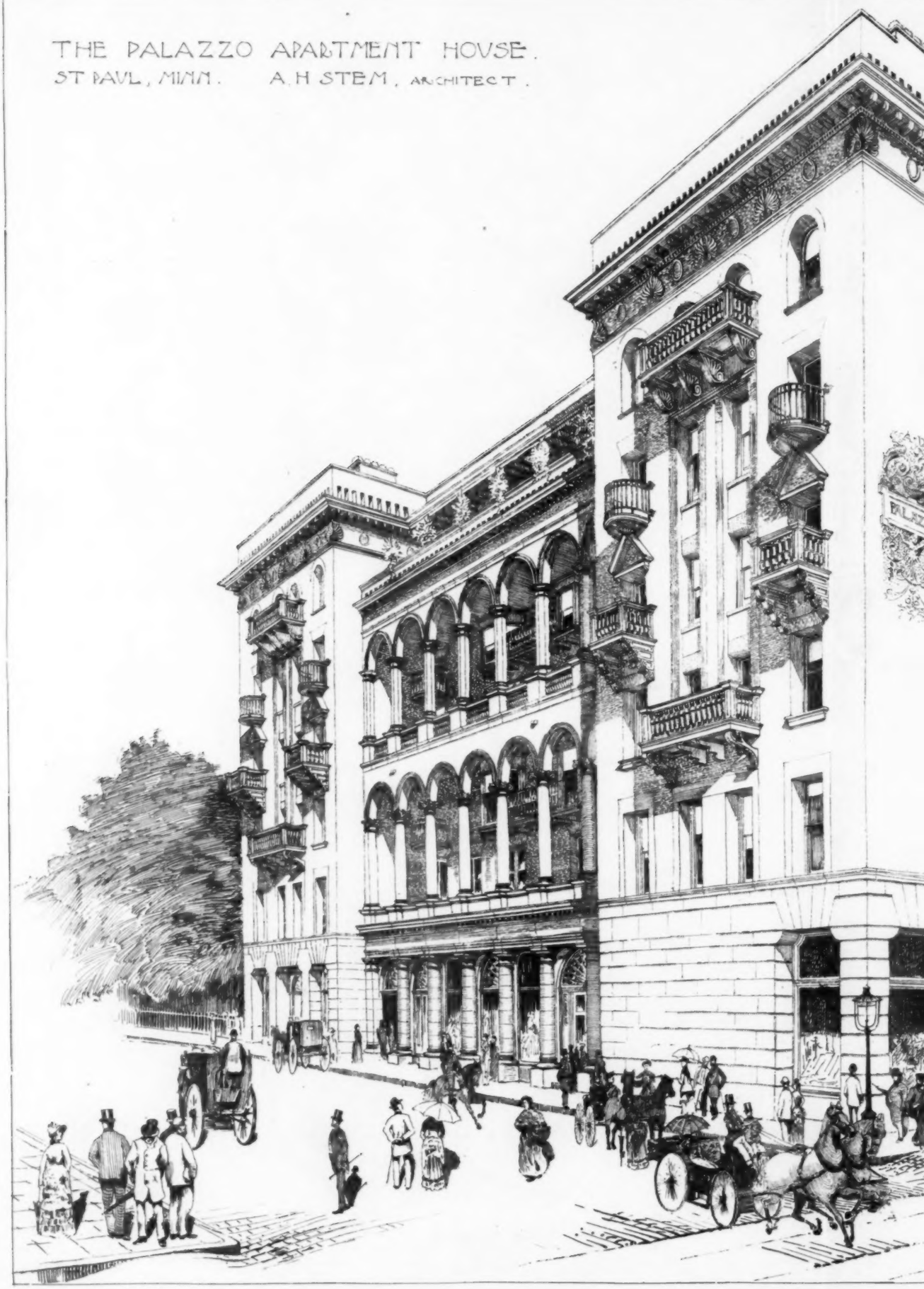
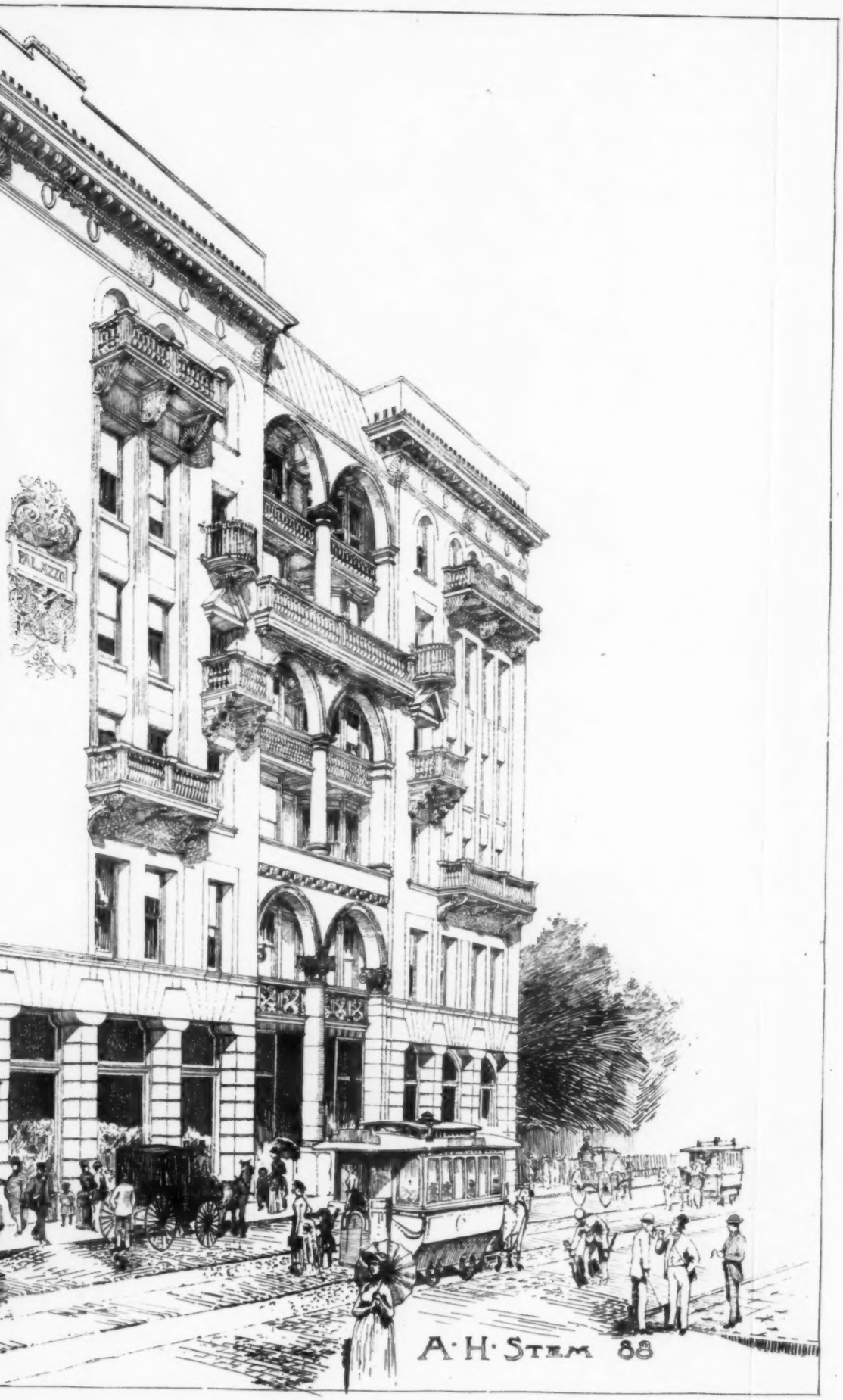
THE PALAZZO APARTMENT HOUSE.
ST PAUL, MINN. A. H STEM, ARCHITECT.





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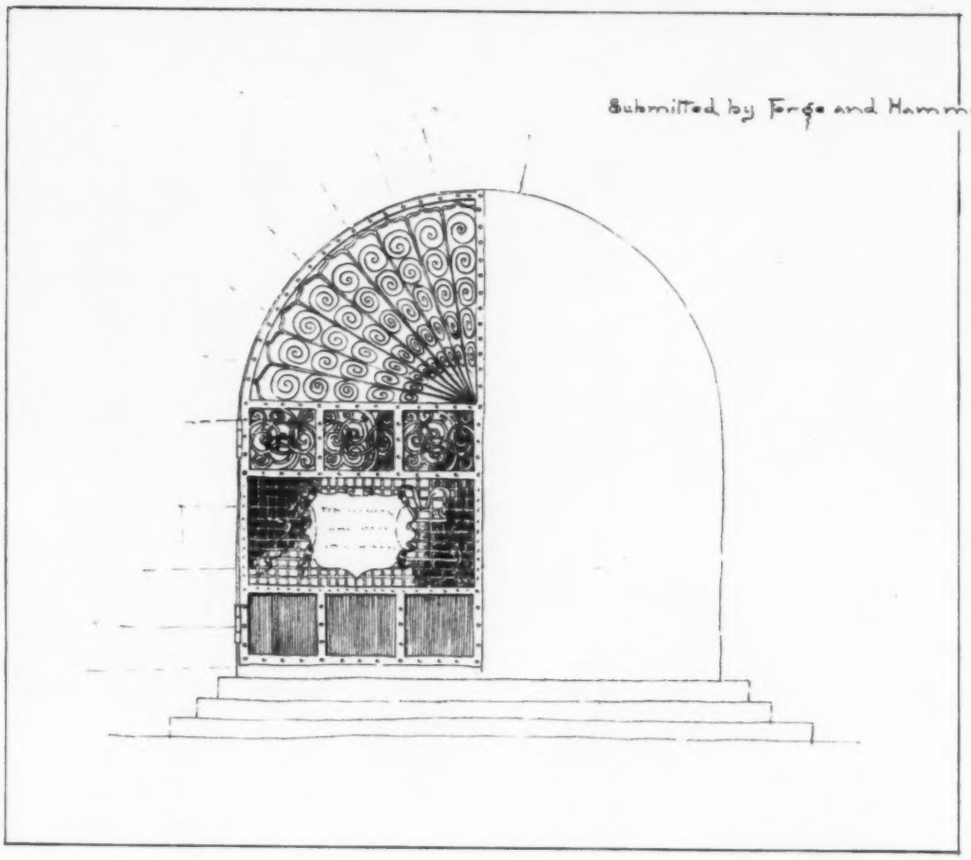

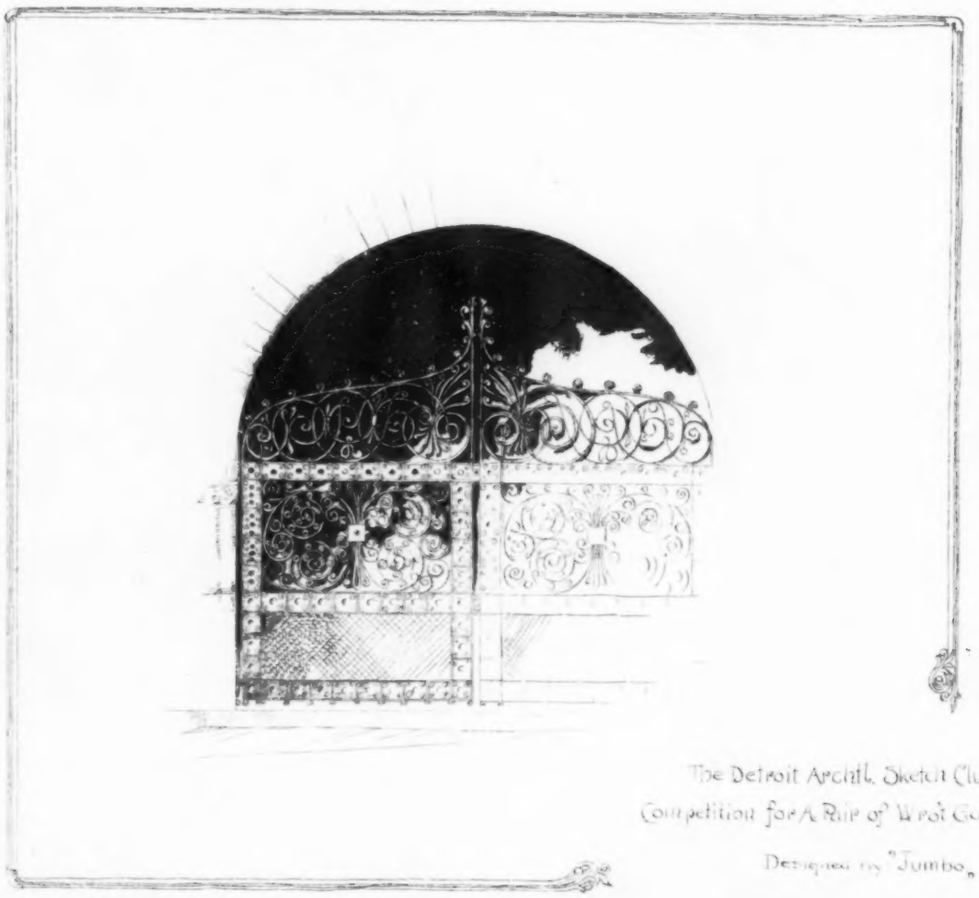

The Detroit Archtl. Sketch Club
Competition for A Pair of Wrot Gates
Designed by "Jumbo"

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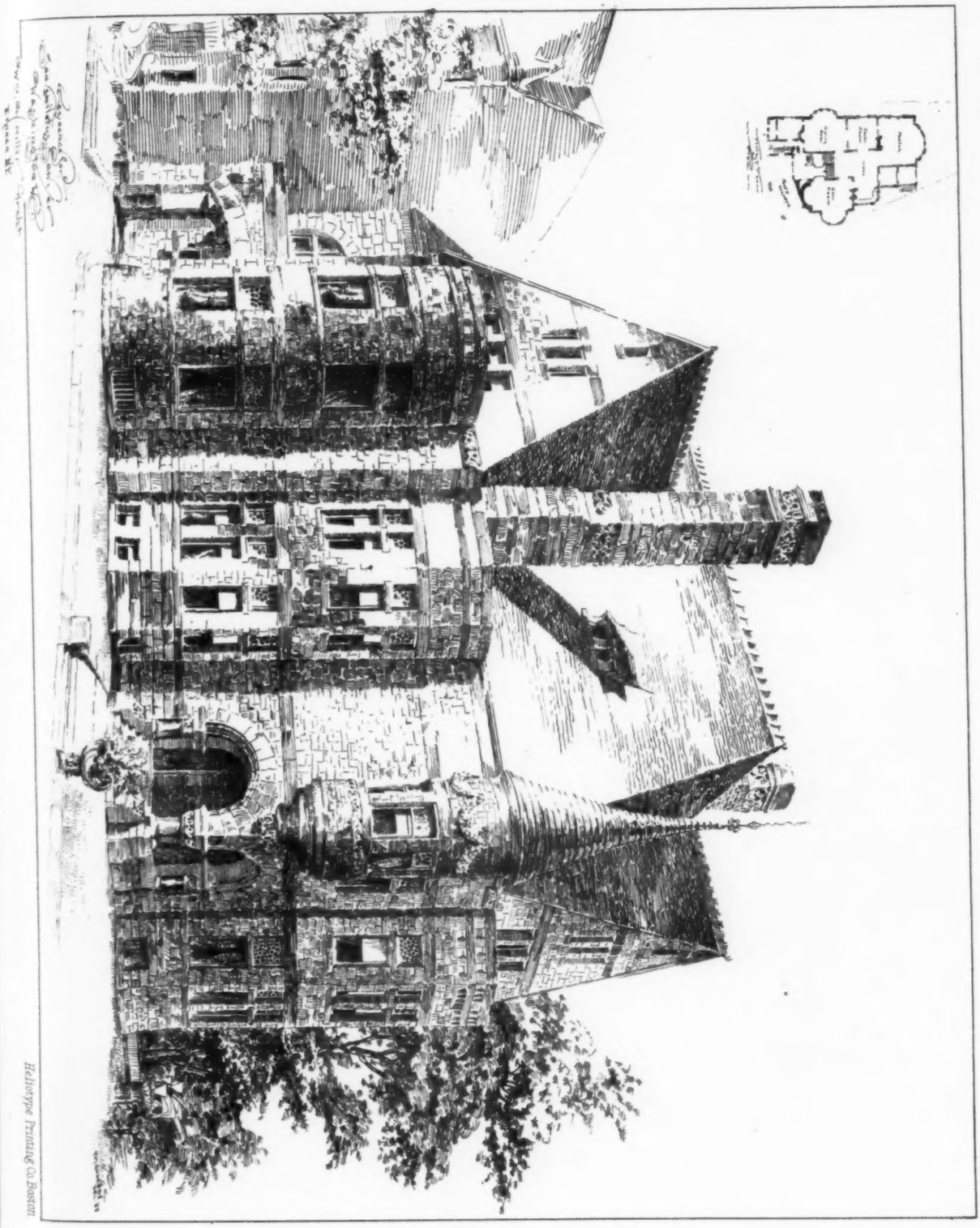

Heliotype Printing Co. Boston

and which, if the federation acquires a sufficiently large membership to warrant it, might be again reduced.

Your Committee presumes that Section 12 of this report will induce probably as much discussion as any herein submitted; for the questions involved in it are apt to be regarded from two very different and sharply separated points of view. Some of the oldest and most successful practitioners would doubtless be willing to sacrifice personal feeling to the common cause, and to start in the new federation from the lowest rung of the associative ladder as the youngest; while some of the latter will be among the first to allow that as regards practitioners far advanced in life who have done the hard pioneering work from which has been built up the platform offering so secure and honorable a foothold to those beginning their professional career — some of these juniors will doubtless be among the first to allow that there would be not only great incongruity and unseemliness but positive injustice in substituting in the case of their seniors the insignia of a lower professional grade for those of the higher one which they have through the heat and burden of their long day borne with honor not only to themselves but to the Institute and the profession.

Respectfully submitted,

E. H. KENDALL, New York.
D. H. BURNHAM, Chicago.
T. P. CHANDLER, JR., Philadelphia.
T. M. CLARK, Boston.
A. J. BLOOR, New York.

ILLUSTRATIONS

[Contributors are requested to send with their drawings full and adequate descriptions of the buildings, including a statement of cost.]

HOUSE OF E. P. BRADBURY, ESQ., BOSTON, MASS. MR. W. WHITNEY LEWIS, ARCHITECT, BOSTON, MASS.

[Gelatine Print issued only with Gelatine and Imperial editions.]

THROUGH an unaccountable blunder, while the name of the owner of this building was correctly printed in the text of last week's issue, it was incorrectly printed upon the helio-chrome plate of the doorway which appeared in that issue.

ST. PAUL'S CHURCH, BUFFALO, N. Y. MR. R. W. GIBSON, NEW YORK, ARCHITECT.

THIS church was destroyed by an explosion of natural-gas and consequent fire in May last. It is now being rebuilt, with considerable changes and improvements. The chancel is considerably larger in the new plan, and porches, vestries, etc., are re-arranged, and large tracery windows are introduced in the place of some of the lancet windows of the old building. The tower and spire remain uninjured. The interior was formerly without a clerestory, but with wooden columns and wooden arches supporting the roof. In the new design, stone columns and arches of masonry support a handsome geometrical clerestory, and the roofs are built at a higher level to accommodate it. The stone used is chiefly Medina stone, quarried in the western part of New York.

DESIGNS FOR A WROUGHT-IRON GATE.

THIS plate shows the prize drawings of the Fourth Competition of the Detroit Architectural Sketch-Club, the problem having been a design for a double-swinging wrought-iron gate for an office-building. First place was awarded to A. Kahn, designer of "Quill Pen"; second place to J. B. Nettleton, designer of "Jumbo"; third place to Rich. Mildner, designer of "Arm and Hammer"; and fourth place, G. Harvey, "Forge and Hammer."

THE PALAZZO APARTMENT-HOUSE, ST. PAUL, MINN. MR. A. H. STEM, ARCHITECT, ST. PAUL, MINN.

THIS building, owned by Messrs. J. R. McMurran *et al.*, at the corner of 10th and St. Paul's streets is now nearly finished.

HOUSE OF SENATOR PHILETUS SAWYER, WASHINGTON, D. C. MR. W. H. MILLER, ARCHITECT, ITHACA, N. Y.

THIS house now being built of dark brownstone with darker trimmings will cost $75,000.

AN ICE-SEALED RESERVOIR. — In a certain town in New Hampshire, which is provided with a supply of water for fire purposes, the water has been obtained from a reservoir about one hundred feet square, situated on an elevation near the town. During the winter, a fire occurred at a time when the reservoir was covered with ice nearly two feet in thickness. The water issued from the hose in very sluggish streams, which soon ceased altogether, and it was suspected that some obstruction had got into the pipe. Suddenly one wise man called several to accompany him to the reservoir. There, with their axes, they cut a hole through the ice, and at once an abundant supply of water issued from each of the hose attached to the hydrants. The ice over the reservoir was so strong that it did not permit the pressure of the air to be exerted on the water therein, and, therefore, the air-pressure at the nozzles would balance a head of water nearly thirty-three feet in height. But when the hole was cut through the ice, the pressure of the air could be exerted upon the water there, as well as at the nozzles, and the supply had the full advantage of the difference in height between the reservoir and the hydrants.— *Engineering.*

MISTAKES IN ARCHITECTURE.[1] — II.

EXAMINATION MISTAKES.

EVERY professional student has now to look forward, more or less, to examinations. There are many callings in which these have been pushed too far; happily, that is not the case, at any rate as yet, with architecture. We have, however, enough examinations and competitions for prizes to bring mistakes in examinations well within our scope this evening. The prime mistake is to go up unprepared, in the hope that one may succeed by a fluke; or, perhaps, in the mistaken belief that one knows the subject so well that no preparation is needed. I have had a rather long and rather wide experience as an examiner in architecture, and I can assure you that the degree of unpreparedness with which some candidates are content is perfectly astonishing. Perhaps a specimen of the worst papers I ever had to correct might be more amusing than impressive; but I am sure that many students of schools of art offer themselves for examination simply on the chance that by a fluke they may get through, and have signally and dismally failed accordingly.

In the case of the Institute Examination for the Associateship, or that for the District-Surveyorship certificate, long and careful preparation is needed, and for each of these a spice of practical training is wanted. The would-be Associate must have some practice in design, and must make himself personally familiar with some specimens of ancient architecture, and the would-be District Surveyor must have some experience of the supervision of building works. Similarly, where drawings have to be made with a view to prizes offered by the Institute or the Association, a candidate, in order to have any chance, and to gain any good from entering on the competition, ought to have some experience of drawing, and, if the prize be for a design, some notion of designing before he ventures to compete; though, as these are competitions, and not pass examinations, failure to succeed does not involve the same discredit, and ought not to have the same discouraging effect on the candidate as failure in a pass examination.

It is a mistake, let me very emphatically say, for any student attending the courses about to begin here to avoid the final examination or any intermediate examination. Of course, the prizes are only few, and, as far as they are concerned, the examination at the end of the session is competitive; but the certificates are given to as many as get more than a certain proportion of marks without limit of number, and so there is for each one a chance of having his ability and diligence recognized, and the opportunity which the class examinations offer of proving to yourselves that you have learned and retained a fair amount of what I try to teach is, in my opinion, of great value.

In the examination-room, it is a great mistake to fire off a piece of knowledge that has nothing to do with the question, simply because you know it; as, for example, suppose you have carefully got up the tracery of windows of different periods of English art, and no question is asked about tracery, but a question is asked about mouldings. If, in answering that question, you drag in the tracery and spend half an hour over it, you do more harm than good. No examiner who knows his work will give a single mark for statements that are irrelevant and do not answer any part of the question, so you get no marks for your tracery; meantime, the writing and sketches have wasted you half an hour, during which time, had you been answering other questions to the best of your ability, you would have been earning marks.

Next to the mistake of lugging in irrelevant matter by the head and shoulders comes the mistake of giving too much time to one or two questions. A paper in which there is no proportion among the answers is one very difficult to mark, but which, from the very nature of things, is sure not to get so many marks as one containing the same amount of writing and sketches, but where more questions are taken, and a clear, condensed, yet correct answer given to each. It is a mistake, also, in architectural examinations, not to illustrate the paper of answers by sketches whenever possible. If, unluckily, you cannot make tolerable sketches, it is very much to be regretted, and you had better stick to written replies; but, if you have any reasonable mastery of the pencil, do not forget to introduce sketches, and the better they are, the better your paper, and the higher will it be marked. It is a mistake — and one often made, I fear — to suppose that examiners in our professional examinations are anxious to trip you up, and that they lie at the catch and will be heartily glad if, by some clever and misleading device, they unfairly entrap you into a blunder. The object of the examiners is to bring out

[1] A lecture delivered by Prof. T. Roger Smith, F. R. I. B. A., at the commencement of the session 1888-89 at University College, London. Continued from No. 673, page 235.

what you know and what you do not know, and it is with an anxious sense of serious responsibility that they carry on this important work. Rely upon it, they had rather be convinced that you are fit to pass than that you must be turned back. But rely, also, upon it that they will not pass you till they are so convinced.

Again, it is a mistake to suppose that any answer which is not wrong will do. If a question involves a difficulty, the answer which evades that difficulty is very differently considered from that which attempts it, even if it should fail to solve it perfectly. For example, in a recent examination I gave the dimensions of a bay of flooring fit to carry a certain weight per foot, and required an iron girder to be calculated of a fixed span, and strong enough to carry that bay. I got more than one reply in which the calculation was attempted, and was carried out on the right method; but the right result did not come out, owing to errors or omissions in calculating. I got one reply, in which, after stating the number of tons to be carried, the answer went on saying, "I should adopt a rolled-iron joist, so many pounds to the foot." This answer was probably arrived at by some rule-of-thumb method; it was not far from being practically correct, but there was no attempt made to work out the calculation, which was the difficult part of the question, and, of course, I could not give such good marks to this reply, which avoided the difficulties, as to those in which the students had tackled them to the best of their ability and by proper methods.

Architects' Mistakes.— We have now reached architects' mistakes, and there seems to be good reason for occupying such time as is left chiefly with mistakes in practice. Still, there are one or two remarks on design which I am tempted to hazard, and which, I think, can usefully be made. Remember, then, that it is a great mistake to attempt to use in designing what you do not understand. Just as in Egypt the captive Israelites could not make bricks without straw, so you cannot design without materials — *i. e.*, without being familiar with the forms, features, and ornaments of the style in which you are working, and with the manner in which those elements have been put together by successful architects before your time, and without, moreover, being practised in the application of that knowledge.

If you want to see examples on a large scale, numerous, costly, and distressingly instructive, of what making architectural bricks without this sort of straw comes to, just walk through the various streets and courts of the city of London. Side by side with some of the best buildings of some of our best architects you will see costly works, substantial and pretentious, designed by men who can have had no intimate knowledge of, and scarcely any training in, our art, and who have in most cases been employed because they were known to moneyed men as trustworthy surveyors. Such have doubtless built soundly, but their works are, architecturally, failures. Getting together this straw — to return to the old figure — is no easy task. It takes a long time and a good deal of pains to gather information enough, and to develop skill and experience enough, to make a really good architectural design, and to work it out in all its detail; yet it is unwise to start practice till this can be done. Sometimes circumstances or the offer of work render it almost necessary for a student of only a few years' standing to begin on his own account; but it is very rare for those who start prematurely to succeed in doing good architecture, unless they have the resolution, after completing their first works, to stop and go abroad and finish their studies, and then come home and resume.

I am tempted to add that a new style is a mistake; not that a new style is in itself impossible, but that it is impossible to you or me. It is idle to suppose that the genius of any one man could successfully work out a new style which his fellow men would feel to be appropriate. Looking round on the motley variety of styles which prevail in modern Europe, we are tempted to believe that it is a matter of no moment what style be brought in and used. Yet a little observation will show you that is not so. No architectural style is practised in England (to limit our notice to the country under our eyes), various as the styles that are or have been in vogue may be, unless its roots are deep and wide in the history or the sympathies of the English people. Greek, which was the style of our grandfathers' time, was welcomed at a time when every man of education in England was, or wished to be thought, a classical scholar. Scholarship is on the wane, and there is now scant encouragement for the practice of Greek architecture, though to learn it is as needful as ever. Italian Renaissance is intimately connected with modern as distinct from mediæval feeling and life, and has become universal in this, as in other countries of Europe, just because it is identified with that which England has in common with every modern European country. Gothic is the architecture which was a native of this country during the whole of the Middle Ages. Queen Anne is Dutch architecture, and belongs to a set of things which became incorporated into our national life at the Revolution, when Holland gave us a king. There have been, on the other hand, various attempts to introduce other styles with which there exist no such links, but the attempts have failed. For example, no permanent result followed the efforts of that most able architect, Owen Jones, to introduce Mahommedan architecture into this country — efforts in which he was virtually without followers. If there is any truth in these views, and I believe there is no gainsaying them, we have no reasonable ground for supposing that a new style could live and thrive, even if a great man had the genius to devise such a thing. If it comes it will grow, not be made.

Every apparent novelty in architecture should be viewed with great distrust, as more likely to be a mistake than a success. That novelty is both possible and desirable is self-evident, but beware of what seems to you to promise to be extremely and strikingly novel. It has, probably, been tried before, and given up as less good than the received way; or, if that be not the case, still there is great risk of its being the blemish, instead of the blossom, of your work — a mistake, instead of a discovery. The one defect of importance in St. Paul's Cathedral occurs at the crossing of the main avenue and the transepts — the one part where its great architect has departed most widely from the practice of other church-builders, and has, in the search for novelty, sacrificed more than he has gained, clever though the disposition of the piers that carry his dome undoubtedly is.

Mistakes in Practice. — In practice — that is to say, in the practically carrying on of the profession of architect — no more grievous mistake can be made — nay, I think, none so grievous — as taking bribes. An architect who accepts illicit commissions, or does nominal work for large fees, or who allows any other of the expedients by which receiving a bribe is made to look as if it were a business transaction to be practised upon him, has sinned against the very first duty of a professional man; he has sold that independence which ought to be his most cherished possession, and has put himself under the thumb of the very persons whom he ought to control. The wisest of mankind says, "A gift destroyeth the heart," and it is not possible to be more forcible, more terse, or more true. There are sure to be times when very specious proposals will be made to most of you, and when it may appear almost Quixotic to decline money which you sorely need; but whenever any case occurs in which you honestly doubt whether the transaction is one for you to agree to or not, I will suggest a practical test. Imagine yourself cross-questioned as to the entire affair by some such master of the art as Sir Henry James, before Mr. Justice Hawkins and a jury in open court, and if you at all doubt whether you would come off with credit, pray take that as an indication that the doubt is well founded, and the proposed transaction should be declined with thanks.

Anything that is in any way unfair is a mistake, as well as reprehensible. It is wrong; it is also bad policy. Believe me, there is no truer word than that "Honesty is the best policy." It is both dishonest and a mistake to get work away from a professional brother, or to undersell the profession by working at a rate below the recognized and fair rate, and it is equally a mistake to overcharge a client. Either of these may be expected to bring an inevitable train of bad consequences, a retribution, in its wake. It is, generally speaking, a mistake to work for nothing. You may occasionally do it in the case of charities in which you are interested, but I think a guiding rule should be not to do it in any case, except where the work is so in your own connection that under any circumstances it would come to you. To do work for nothing, and thereby deprive some other architect both of the work and the fees, is extremely bad.

I think there remains no worse mistake to note than temper. Temper is a mistake — a ship without a rudder, a horse without a rider, or a stream that has burst its banks, are apt illustrations of the condition of a man of business who has lost his temper. Above all things, an angry letter is a mistake. Make it a rule never to write a line while you are angry; for, somehow, an angry man's pen seems dipped in permanent gall, rather than ink, and his written words, unluckily, have not the same chance of being either promptly answered and then forgotten, or good-naturedly overlooked, that hasty spoken words often have. A letter written in heat is read, you must remember, in cool blood. If something raises your wrath, and you sit down and fire off a withering epistle, the best thing you can do is to put it in the fire there and then; the next best, to keep it twenty-four hours and then reconsider it; and the next best, to show it to a judicious friend.

One in high station, who had been much irritated, and had written a splendid and stinging reply, took it to the most influential man whom he knew. The chief — I think it was Palmerston — read it right through without a word. "Got a copy of this letter?" "No." "Not even a rough draft?" "No. I wrote it straight off." "Very injudicious letter. Much better burn it" — and, suiting the action to the word, the great man put it into the fire and coolly held it there with the poker till there was no shred left. That was the action of a true friend.

I must, at the same time, point out that just anger is not the same thing as giving way to temper. The ability to exhibit indignation at the right moment, if kept perfectly under control, is very useful to one who has to supervise works or direct men. The just anger of a superior is generally dreaded, and to an extent far beyond what one would expect or can quite explain. If, therefore, you are able at the proper moment to show an offending artisan, foreman, contractor, or tradesman that you are justly and with good reason roused to anger, it will generally help you in the control of the works under your direction.

My reference to an angry letter as a mistake makes it suitable here to add that we are liable to make mistakes by writing where we ought to speak, and speaking where we ought to write. Writing is quite permanent; therefore it is far more fit than our fading memories to record anything that should last. It is quite inelastic, quite unyielding; so it is unfit for anything of the nature of give-and-take. In all negotiations, explanations — above all, whenever there is a difficulty or ground for dissatisfaction — see people, at all

sacrifices, in preference to writing them. At such times it is a mistake to write. On the other hand, if any specific order has to be given, if any definite objection or complaint has to be made, or if any agreement has to remain in force for any length of time, it is equally a mistake not to put it in writing. Your order, your complaint, your contract may often be originally done by word of mouth; but, in such cases, they should be afterwards repeated in writing, for accuracy's sake.

In architectural practice delay is a mistake. It is not always possible to be prompt, but it is far more possible than persons who habitually procrastinate are willing to believe, and from first to last it will greatly add to your chance of success if you are prompt. At the first inception of an undertaking, whether the client be eager or the reverse, it is equally prudent to do something at once. The eager client is baulked if he find nothing done after a short time — perhaps changes his mind as to doing the work at all, or more possibly changes his architect. The lukewarm and indifferent client, who might by a promptly-prepared sketch have been encouraged to go on, is disheartened, or turns to something else, or postpones or abandons his intention. Were I to trace the work of an architect all through, it would be easy to show that at every succeeding stage delay is a mistake, though I am bound to admit that it often can hardly be avoided.

Carelessness is another mistake, and one into which not a few men are apt to fall. The saying is attributed to Goethe, that "Genius is the art of taking pains." The common notion of genius is that it can do without taking pains. I do not ask you to accept this definition of genius as exact, but it covers half, and more than half, of the truth, and it would, I think, be perfectly true if you altered the wording and said, "The secret of success is the art of taking pains." Watch a successful man in the exercise of his art or pursuit, whatever it may be; you will see him all attention, all devotion to the business in hand. Consult an eminent physician, and you see by his questions, his air of concentration, his whole method, that for the time being your constitution, your ailment, and what to do for you in order to relieve you, occupy his entire and undivided attention and thoughts. It is chiefly this habit and power of concentration which has made his pursuit of medicine successful, has enabled him often to baffle disease and restore health, and has gained him reputation.

Read any good life of any prominent public man (as, for example, read Mr. Street's life lately published), and you will see what incessant, eager toil and watchfulness occupied every hour of his day, and his night, too. Nor is it less easy to remark in recreations that success can only be secured by great pains, however clever you may naturally be. Watch an angler who is known to be habitually successful, his keen attention, his constant thoughtfulness about tackle, flies, water, the long hours he will devote to fishing, and the eager pursuit of his game. A champion player in any athletic game, rowing, cricket, tennis, football, rifle-shooting — what constant practice! what a watchful eye for every turn of the game, every detail of the pursuit! Now if you are to be successful in architectural practice, you must set about it in the spirit, temper and method of Grace at his cricket, or Renshaw at his tennis, or a Queen's prizeman at his rifle-range.

It is, however, possible to throw one's self into the interesting part of a pursuit, and to remain indifferent to details that do not of themselves attract or that seem insignificant. This though, of course, better than being languid and careless about the whole business, is likely to lead to trouble. In the conduct of works, then, it is a mistake to neglect small matters, though it is equally a mistake to fuss. In every building there occur a certain number of apparently little points which must receive the architect's careful attention, but which one is naturally more inclined to leave to others or to chance than the questions that affect large parts of the fabric. The difference between the important and the unimportant does not, however, lie in their magnitude, or their cost, or their conspicuousness. The main walls are a costly part of the building, but they may be considerably damaged, decayed, or mutilated without a tithe of the inconvenience to the inmates which will occur if their chimneys smoke, their taps yield nothing but lukewarm water, their ovens will not heat, or the water runs off from their cisterns. The same thing is often true of the artistic effect of your work. You have, let us say, a Gothic church in hand, and labels over the windows springing from carved bosses. You carelessly place the bosses below the springing line instead of above it, or you in ignorance draw them so. That small blunder produces exactly the effects on the eye of a cultivated observer that would result to his ear from your talking about "hart" or "harchitecture," and, in its way, the proper placing of that one detail is as essential to the success of the design as the most ambitious or elaborate of its features. It is, therefore, a mistake to consider that any single thing essential to your building is unimportant or may be safely neglected.

There is, however, an opposite; fussiness is a mistake. It is fussiness to visit a building too constantly, or to interfere for the sake of interfering. You must not forget that if, as architect, you have the power of making alterations, every alteration, even if it be an improvement, means delay and expense, and that delay and expense are among the worst evils that can afflict a building. One of the most troublesome and unsatisfactory disagreements I ever had to unravel grew out of the architect, a man of real ability, having little other work in hand, paying a visit at least every other day to the works, and never going without ordering something to be done or undone. The accumulated effect of these orders was months of delay and claims without end for extras, while for all practical purposes the building would have been quite as serviceable if carried out exactly as shown in the original plans and specifications, without any of the modifications and improvements.

I am quite aware that one cannot expect people's minds to cease working when once a contract has been signed, and that it is proverbially "never too late to mend"; but, on the other hand, "you may buy even gold too dear." "A rolling-stone gathers no moss," and there are few improvements which are really worth the cost, delay and annoyance that come of interfering with a contract which has once been settled and accepted. In short, generally speaking, variations are a mistake.

Mistakes in dealing with your clients are especially to be guarded against, because they generally injure your prospects in life, yet they may occur in so many different ways that it is impossible to catalogue them. Many, if not most, instances of miscarriage between clients and their architects appear, however, to start from one root, namely, from mistaking the duty you have to discharge, or forgetting to keep up the proper relation of architect and client. Your duty may be described thus: to form a correct idea of what your client wants and wishes, and to do your best to obtain it for him. Your relation to him is purely professional, and not that of friendly intimacy, or equality, or good fellowship, or boon companionship. There are cases where an architect forms an idea of what a client wants, but one which does not correspond to his wishes, and then there is sure to be dissatisfaction. There are cases where an architect forms a notion of a client's wishes, but fails, till too late, to realize that it is not what he wants. The result again is dissatisfaction. There are cases in which the architect troubles himself little about either the wants or the wishes of his client, and works out what in his judgment they ought to be. Same result. Lastly, it has sometimes happened that the architect and the client, or one of them, have forgotten to maintain their intercourse on the proper professional footing, and if any cause of disagreement arises these cases end in the bitterest of quarrels. Professor Cockerell — a prince of architects — used to say to us, "Be a gentleman among artists and an artist among gentlemen."

As one illustration of, perhaps, the most common form in which this sort of misunderstanding of the architect's duties develops itself, I will take the case of a dwelling-house. The architect busies himself to learn what his client's wishes are, and he takes no small pains to put them into shape, and he, perhaps, designs something which is very near to what his client would like. But he neglects to realize exactly what his client wants. Let us suppose that his client is a man of moderate means, who cannot trench upon his income, and who has, let us say, £2,000 to spend, and that what he really needs is the best house that can be had for a couple of thousand pounds, all which his architect might have found out had he taken the trouble. When the lowest estimate for the design comes in at over four thousand, the whole thing is abandoned in chagrin and disgust, and the architect too late realizes that he ought to have found out what his client needed as well as what he wished.

The relationship between client and architect involves the necessity sometimes of very plain speaking, and the more thoroughly professional the bearing of the architect has been, the more thoroughly is it possible for him to discharge this sometimes painful duty with perfect effect. For example, in the case I have suggested, had the architect quite realized the case, he would at some period have had to say, "You cannot within the limit of expense that is prudent build anything either so ornamental and so roomy as you want; the design must be plain, some rooms given up, and the others kept small," and so on. Whenever any such necessity arises, believe me, it is a mistake to shirk or postpone the unpleasant duty. Meet it squarely and fairly and with good temper.

In dealing with those employed on your work, it is a mistake to suppose that every contractor, tradesman, or artificer is a thief or an extortioner, and every quantity-surveyor a kind of contraband agent. I have put it strongly, but the suspicious temper of mind at which this remark points goes sometimes far towards a tone of feeling as exaggerated as this. The fact is, that your contractors and tradesmen are engaged in one of the most complicated and difficult businesses possible. Their motive for carrying on the business is to make a profit, and you should look upon it as a matter for sincere regret if a profit is not made by the contractors on your works. You and they are engaged together on the difficult task of erecting a building, and if originally you know them to be respectable, by all means treat these people as coöperating with you, and aiding to give reality to your designs, which is their real position, and do not suspect unfair dealing till some proof of it begins to show itself. Such a course will be much nearer the fair and proper mode of administering a building. While I recommend this tone of mind, I do not recommend that you should cease to be vigilant and careful. It would be quite as great a mistake to abandon watchfulness as to abandon confidence gratuitously, and it would be a departure from the line of conduct which your duty to your client prescribes to you. It is, perhaps, hardly necessary now to say anything about quantity-surveyors, but I know that when I began practice, there was a kind of uneasy feeling in the minds of some of us, as though quantities were a kind of illicit trading, and those who prepared them akin to smugglers. If any of you share these notions now, permit me to assure you that they are a mistake, that the profession of a quantity

surveyor is a most honorable and confidential one, and that the work they do is now indispensible to the conduct of building operations of any magnitude or complexity, and the assistance they render to the architect very valuable.

This mention of contractors and surveyors will serve to introduce another subject that should be noticed. It is for a beginner a mistake to employ second-rate or unknown men, either as builders, manufacturers, or quantity-surveyors. When you have established your position and gained a reasonable amount of reputation and experience, do as you like, but in early days you cannot afford to employ people who are not first-rate. It is of vital importance to run no risk of failure in your early works, and the employment of thoroughly reliable persons will greatly diminish that risk, and their known position and trustworthiness are a great safeguard and help to you if any part of their work should go wrong; and to some extent the same caution is a prudent one as regards new materials and untried modes of construction. A fortunate accident in the very first matter of any importance ever put into my hands revealed to me the value of employing known men. The work came from a man of business in the country, and I was, I know, looked upon with distrust by his London agent, who saw me for him, as young and untried. Fortunately, after making out some drawings and a specification, I got an estimate from a contractor of good repute, and I well remember how, when I went with the whole to my new client's agent, his face brightened up when he saw the signature of a man whom he knew well as competent and trustworthy, and by whom, ultimately, by and by, the work was excellently done. I urge this the more because young men often are more exposed to the temptation to get their work done in the very cheapest way than they will be in after life.

It appears to me to be as much a mistake for a practitioner of architecture to isolate himself as I earlier pointed out it is for a student. If there be no suitable associates within reach it cannot be helped; but in nine cases out of ten there are brother professional men available. Just as you, gentlemen, as students, can learn a great deal from one another, and will lose much of the stimulus and encouragement which make work go well if you do not in some way work in company, so in after life also you will derive great benefit and great pleasure from the society of those who are working at the same profession as yourselves, pursuing the same aims, encountering the same difficulties, delighting in the same studies; and you will be able to render assistance to your professional friends as well as to receive it from them. There are many circumstances under which two architects have to meet as representatives of two clients differently affected by some building operation. You can hardly imagine till you have had experience of it how much better all this class of business is got through if the two professional men know one another; or if even they only know each other as members of the Institute or of the Architectural Association, or in some such relation, than if they meet as absolute strangers. There are also many circumstances in which it is of inestimable importance to an architect to be favorably known to the members of his profession, and I strongly urge you all to begin in this class-room and the Association and Royal Academy schools to work together, and in after-life to belong to the Institute, and not only to belong to these societies, but give some attention and time to their work. An architectural hermit is a mistake.

It is not necessary, I hope, for me to offer proofs that most of the mistakes named deserve the name. I think your own good sense will have recognized, as we went through them, that they merit, each of them, a place in the list of things to be avoided. Some of these mistakes I have myself made, and have found to my own cost that they are what I have described them to be. Others I have happily escaped, but I have seen them made, and know that their consequences are not good.

To steer clear of every error is impossible, but what I wish to say is that good sense, right feeling and thoughtful attention to your work will go far to preserve you from any very serious slips. Years ago a pupil of mine acted as clerk-of-works on a job of mine where there was a great deal of masonry, and something which he told me about that masonry seems to convey a lesson. He noticed that some of the masons, as soon as they got a block of stone out of which to cut a feature of the building, set to with mallet and chisel, and in ten minutes were hard at it. Others would spend an hour or two, or possibly a whole morning, studying the block of stone on every side, considering exactly how best it could be utilized, and, in short, laying out their work before they put their hands to it. The men who made mistakes in their work were masons of the first group, not of the second. Perhaps this observation may suggest to us a method by which we may avoid mistakes in our work.

A Tall Chimney. — What is described by American papers as probably the tallest chimney in the world is being completed at East Newark, N. J. The diameter at the base is 28 feet, and the ultimate height of the brick structure will be 310 feet, with a diameter at the top of 9 feet. A cast-iron rim 20 feet in diameter and a bell surmount the whole, and will make the total height of the chimney 335 feet. In its construction 1,700,000 bricks were used, and the total cost will be $85,000. — *The Builder.*

MEDIÆVAL HOUSES.[1] — VI.

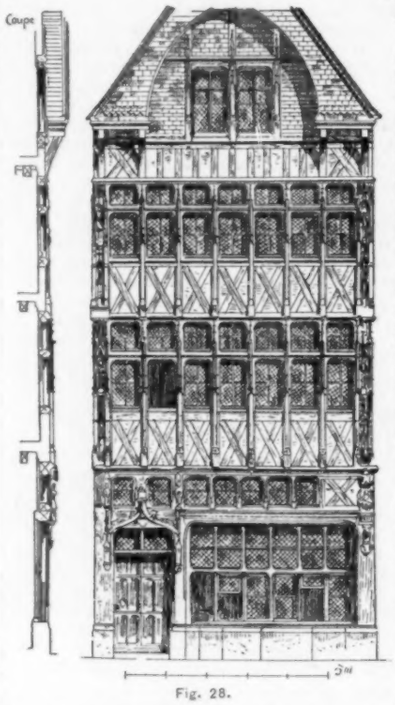

Fig. 28.

The tendency of the northern cities was always toward more open fronts. At the end of the fifteenth century they had become perfect lanterns, as in the example here given (Fig. 28), the exact reproduction of a house in Rouen. Only the cross-braces interrupt the succession of wooden panels finished everywhere with the perfection of joinery. At this period wooden constructions begin to lose the character of carpentry and to take on the semblance of great pieces of furniture.

In Figure 28 fillings of masonry between the timbers are still apparent, but they soon disappeared behind panels of joinery and the whole front showed only a collection of wainscotings.

After this design were built many of the houses of the end of the fifteenth and the beginning of the sixteenth centuries.

Figure 29, which is a portion of the dwelling of the Abbot of St.

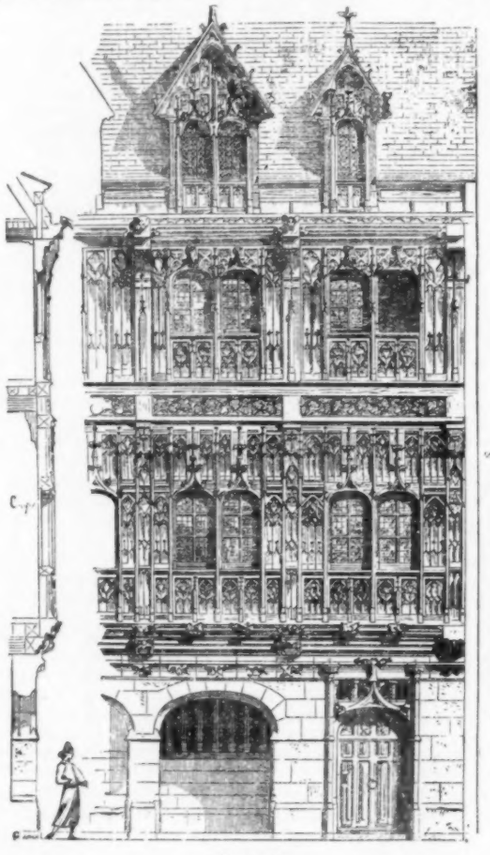

Fig. 29.

Armand, at Rouen, shows above the ground floor of masonry, two stories of wood, entirely covered on the outside with carved wooden

[1] Translated from the French of Viollet-le-Duc, by Mr. A. B. Bibb. Continued from page 223, No. 672.

panels. When, a little later, with the Renaissance, the use of stone was resumed, this custom was so firmly rooted that they still built a great number of wooden houses, in which, however, are found pillars and bands whose forms do not belong at all to wood construction. In the street of the Grosse Horloge, at Rouen, may be seen two houses of this class covered with costly details. Figure 30 gives a part of one of them.

The sixteenth century witnessed the building of a number of these pretty houses, a last reflection of the art of the Middle Ages. After the disasters which occurred at the end of this century, dwellings returned to a simpler style, while the plans were very slightly altered.

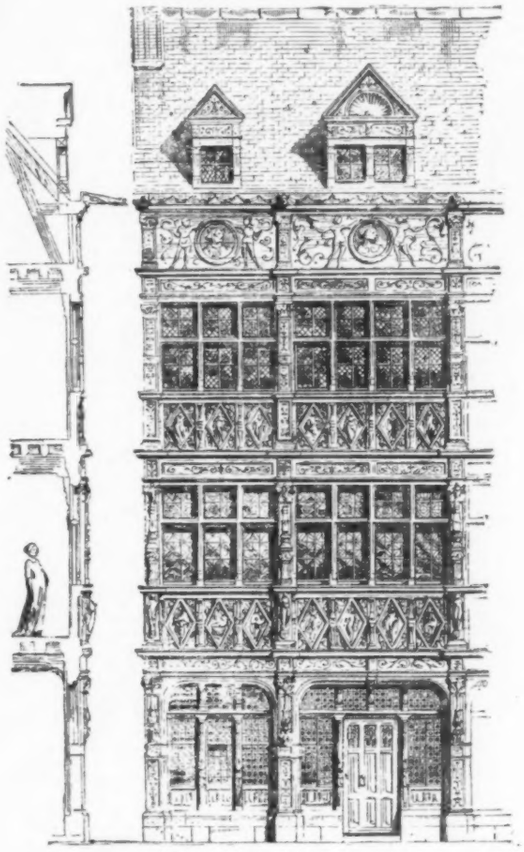

Fig. 30.

Many houses in the reigns of Henry IV and of Louis XIII reproduced exactly the plans of dwellings of an earlier period. It was not until the reign of Louis XIV that the houses (we do not speak of *hôtels*), began to lose their exterior character and to display only plain walls or wooden panels filled-in with rough-cast, with square windows and very little to attract the eye. At this time, also, the plan of the interior was decidedly changed. The place of the halls, which we have found in all dwellings, until near the beginning of the seventeenth century, was used for chambers. Interiors were more divided, each member of the household being assigned to separate quarters, and the custom of a life in common disappeared.

From the strikingly individual character of the city dwellings already treated in this article some interesting inferences may be drawn. We are among those who believe that the moral force and vitality of a people are more or less the result of individual responsibility. True civilization, fertile and active, is that in which the citizen preserves the fulness of his own individuality.

The theocratic and despotic civilizations of the East have shone with temporary brillancy for a time only to be thrown down never to rise again. In those civilizations the citizen has no place; below the sovereign and the theocracy or aristocracy there are masses of men whose passage through life is marked only by immense monuments created by their labor, like those of Egypt, India and Asia Minor.

Under such a state the *house* does not exist, between the palace and the hut there is nothing intervening, and the huts are all alike.

The Northern warriors emigrated into the West, bringing their families in great chariots, actual houses on wheels, which they fixed to the soil where the tribe conquered. To these races, the Greeks of antiquity at their head, it was given to build *houses*, dwellings indicating the habits and tastes of individuals, changed little by little by the changes affecting these habits and tastes. The feudal system, though imposed upon France by conquest, and opposed to the traditions of the Gallo-Romanic population, did not suppress individuality and personal responsibility, but, on the contrary, developed with energy these natural tendencies of the Western people. It brought about the struggle for permanent government and left, as a last effort against oppression, the employment of feudal mechanism itself; for the victims of the oppression of the lords could always apply to the sovereign and each municipality, by throwing in its fortunes with the party of the bishops or of the barons, or repelling both, by renewing allegiance to the sovereign, could make a last appeal against tyranny. This condition was certainly not indicative of an orderly and civilized government, as we understand those terms, but it was not opposed to the intellectual development of the individual, who was in the towns of the Middle Ages a distinct factor in the social problem, and whose domicile preserved a definite, recognizable character. The absolute government of Louis XIV stifled almost entirely this sentiment, so actively felt up to the end of the sixteenth century, and the house of the French citizen of the seventeenth century had lost all its individual character. Uniformly built, uniformly lighted and arranged, it absorbed the citizen, who lost as he entered there all individual physiognomy and no longer knew himself, except by the number of his house and the name of the street.

In England, where the feeling of personal responsibility and individual distinction is much stronger than in France, the inhabitants of large cities have preserved the separate life of the families and seldom follow the system of mingling several families in one dwelling. This appears to us to have a moral significance of the highest importance, and it is not without a lively satisfaction that we see this feeling of family distinction, of individualism, reviving and reacting against the enervating system introduced in France under the government of Louis XIV. Each one wishes to have his own house, and while the large majority of the inhabitants of our great cities cannot satisfy this ambition in town, they can at least escape the disagreeable conditions of a common dwelling by building those myriads of small houses which fill all our suburbs and in which families of small means can pass a great part of the year.

It will be one of the glories of the present government of France to have taken the most radical means to promote this healthy tendency, for, in our judgment, a country cannot call itself morally civilized until the day when each citizen may possess his own dwelling in which to rear his family and leave behind him some remembrance of the good he has done or the services he has rendered his neighbor. The walls speak and the man who would do an evil action in rented lodgings which he is to vacate in six months will hesitate to sin between the walls of his own and his children's home.

The hotels or city houses of the lords and wealthy commoners occupying extended spaces and surrounding courts and even sometimes gardens, did not affect the defensive arrangements of the seignoral palaces and were not provided with towers and battlemented walls. As we said in the beginning of this article, the hotel had not usually its living rooms, but oftener the servants' quarters and offices and sometimes only a plain wall with a small entry door upon the street.

The merchants as well as the common people mingled in the daily life of the street, a necessity for the most of them, while the nobles and the nabobs who maintained large retinues, shut themselves up in their city homes and lived an isolated feudal life, holding no regular communication with the outer world. These houses were naturally more subject to change than those of the common people. Occupying larger spaces and belonging successively to rich owners, they were altered with the fashions of the day. We find in France no hotels of a date prior to the fifteenth century, or, at least, the ruins of those of an earlier period which remain to us are of mediocre value. One of the oldest of them, still to be seen at Provins, belonged to some rich canon of Saint Quiriael and is composed of two distinct groups of buildings separated by an arched passageway (Figure 31). To the left is the great reception *salon* on the first story, reached from the court by an outside wooden staircase. Three double windows pierced the front toward the church and lighted this room; it was warmed by a great stone fireplace and wainscoted with woodwork apparently panelled "en berceau." On the right of the passage are the kitchen and two rooms between the court and the garden which served as living rooms.

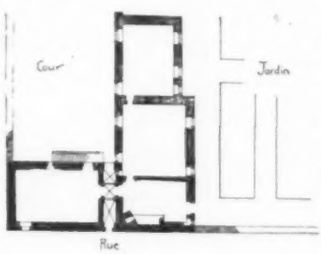

Fig. 31.

[To be continued.]

COMMUNICATIONS

THE TARIFF ON IRON-BEAMS.

TRENTON, N. J., November 10, 1888.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—In your leading article of October 27th appear some

statements which, even though it may cause you some mortification to have the ignorance or carelessness of the writer thus noticed, should be corrected.

The article states "One hundred kilogrammes is two hundred and sixty-eight pounds." The truth is that 100 kilogrammes equals 220.5 pounds, and this error effects all the subsequent calculations. The article says: "We do not know whether the United States Custom House calls a ton two thousand or twenty-two hundred and forty pounds."

If the writer had informed himself of the facts he was discussing he would have learned that the duty on rolled beams is not levied by the ton at all, but is one and one-quarter cents per pound.

I quite agree with the statement in the article in question that "while the matter is under discussion it is important to have the facts correctly stated" and hope you will see that this is done. It does seem to me that an editor owes it to his readers to understand that which he is writing about before he undertakes to instruct the public.

I enclose copy of a letter I addressed to the Editor of *The Times* stating some facts which bear on the subject and which may interest you. Yours truly, Fred J. Slade.

[As is shown in the rather more polite letter published last week, our error came from using the coefficient for transforming kilogrammes into Troy pounds, instead of that for avoirdupois pounds — an illustration of the advantages of having two or three different sorts of pounds in common use which has a certain value. Otherwise than in this, which makes a difference of twenty per cent or so in the results, we do not find such evidences of ignorance or carelessness in our modest screed as to cause us severe agonies of mortification, and we think that if our correspondent will look at the Revised Statutes of the United States he will find the duty on rolled-beams stated exactly as we quoted it, and not as he describes it, although twenty-eight dollars a gross ton, and one and one-quarter cents a pound, are of course equivalent. As to the substance of our article, we do not see that either of the letters affect our main point, — that the New York daily papers have not put strongly enough the case of engineers, builders and owners who use rolled-iron beams, in stating that the duty amounts only to eighty per cent *ad valorem*. Instead of that, it is, even with avoirdupois pounds, about one hundred and twenty per cent on the Belgian price, and the latest advices indicate that the foreign prices are falling, and the duty consequently rising. In the copy of his letter to the *Times* which Mr. Slade is obliging enough to send us, he enters into a long discussion about the merit of the system of paying "American rates of wages, American rates of interest, American salaries, and American prices for American goods," and, we might add, American profits to American combinations. As our ignorant and careless mind does not venture to soar into the realms of political economy, but only trots around in its own narrow circle of practical experience, we will not attempt to discuss the theoretical question, but we must confess that we cannot see, how American interests are benefited by keeping the price of those all-important building materials so high, that it is cheaper to get them in Belgium, pay foreign insurance and brokerage, and hire foreign steamships to bring them over, than to buy them of our friends and neighbors, or, perhaps we should say, of the foreign owners of our mills, who are amiable enough to hire some of our friends and neighbors to work for them, if they cannot get any one else to do the work more cheaply. — Eds. American Architect.]

COMBUSTIBLE STEAM-PIPE COVERINGS.

Boston, Mass., November 21, 1888.

To the Editors of the American Architect:—

Dear Sirs, — The composition for non-conductor of heat of steam-pipes, described on page 226 of the *American Architect* of November 17, answers its purpose very well, and has the advantage of cheapness.

I saw the receipt in an English paper some twenty years ago, and have used it and suggested its use to many others; but a recent experience in regard to its combustion has caused me to abandon both its use and commendation.

The cylinders of a very large engine in a mill in Lawrence were protected by this covering, and on the 11th of last September the covering was found to have been set on fire by the heat of the steam. The fire gained sufficient headway to cause the automatic sprinklers in the room to operate, and they were the chief agents in extinguishing the fire.

Although this is the first instance that I know of its combustion, yet I believe the circumstance to be of importance enough to cause the abandonment of this material for use where any hazard can result from its ignition.

There are a large number of steam-pipe coverings in the market which are composed of combustible material, and which are set on fire from time to time by the heat from the steam-pipes. It is impossible to define the exact conditions under which a steam-pipe can produce fire. There are numberless instances where combustible material has been in contact with steam-pipes heated very hot, without ignition; and, on the other hand, there have been instances of ignition caused by steam-pipes at a pressure as low as seven pounds to the square inch, and in one instance to my knowledge by the boiling solution used in bleacheries, which could not reach a temperature of over 232 degrees Fahrenheit.

It is, however, well known that there are a large number of incombustible and inorganic substances which are efficient protectors against radiation, and, therefore, questions of economy do not render it necessary to use combustible material which may be ignited by the heat from the steam-pipes. Very respectfully,

C. J. H. Woodbury.

Vienna's Walls to be Taken Down. — The Viennese are in great delight at the prospect of seeing the Linienwälle or boundary walls of the city demolished. These walls, making a complete circuit of the capital and girt by a moat, were erected during the last century, while Vienna was still afraid of Turkish invasions. They were not fortifications, but merely a barrier against assaults, encircling the regular fortifications, which rose about three-quarters of a mile from their gates. The razing of the fortifications was decreed thirty years ago, and it is to this improvement that Vienna owes its superb Ring. Railways and new boulevards have also swept away many portions of the Linienwälle but the circuit is still marked by gates where octrol dues are levied, and it is to these imposts, rather than to the crumbling fragments of walls, that the Viennese object. Yesterday in inaugurating the new park at Währing the Emperor hinted that the fortieth year of his reign might be signalized by the removal of the walls. To-day the happy citizens are concluding that the octrol duties are about to disappear too. This, however, is by no means sure, for the Town Council draws 12,000,000 florins a year from the duties on food and drink which it levies at the city gates. — *The London Times.*

TRADE SURVEYS

The chief unsettling factor at this writing in trade and manufacturing circles is the uncertainty as to the probable volume of business that will be placed in the manufacturing establishments throughout the country. The full confidence that exists in favor of a large volume of business is helping to maintain prices at a high level. Manufacturers of all kinds entertain the opinion that whatever delay will be shown by consumers and distributors and projectors of work in placing orders is simply an act of prudence. They believe that in a very short time a large amount of business will come to their shops for winter execution and spring delivery. There is no sound reason for explaining the correctness of this belief. If there were any its chief cause would be in the railroad situation. While gross earning as it has often been pointed out, are large, net earnings are small and railway managers have less confidence in their ability to harmonize their conflicting interests in harmony with the interstate Commission law. A movement will be undoubtedly made in Congress to secure some modifications of this law by which the intense friction created by this law can be lubricated. If railroad managers were able to live in harmony and increase their net earnings it would have an important bearing upon railroad building during 1889. It is not probable that Congress will modify the law notwithstanding the powerful railroad influences that will be brought to bear, to bring about such modifications. Whether any modifications are absolutely needed is uncertain. Some railway systems are certainly suffering but the law makers know the strong feeling among the masses of the people against any mistaken leniency to railroad managers and they will not be quick to obey the behests or listen to the importunities from those who are now suffering from this law. Just at this hour it is impossible to say whether there will be much less railroad building on this account or not. On Monday of this week the Pennsylvania Railroad Co., contracted for 45,000 tons of steel rails at $28.00 per ton, to be furnished by three rail-making companies in the State of Pennsylvania. This, it is thought, will induce the placing of a large number of orders by managers who have been watching for the cue from those whose judgment they had every confidence in. If there should be an active demand for steel rails it will materially help all the dependent interests. Reference has heretofore been made to the active demand for machinery, mill and shop equipments for ships, locomotives, lake-craft, rolling-stock, tools, etc. All the statements made do not represent the magnitude of the inquiries made or the requirements which exist. It is uncertain how much of this business will be placed within any given time.

The anthracite coal producers have had things their own way in the price of coal but they are now brought face to face with a reduction which they cannot control or resist except in restricting production which they will probably do on the first of December. This year's production will probably reach 37,000,000 tons. The largest output ever reported. Consumers throughout the region of country supplied with anthracite are all better supplied than they ever have been at this season. There is a very active demand for bituminous and the miners of coal are opening mines and increasing facilities for supplying customers next year. The textile manufacturers are very much encouraged by the orders for goods that have come to hand within the past two weeks. Southern textile managers are speaking hopefully of their success in selling the larger part of their winter's production. This is calculated to still farther increase the building of factories in the South. Fall River manufacturers are able to declare good tidings. A considerable expansion of capacity is now contemplated. Boot and shoe manufacturers have settled down to accept present prices for the next spring's goods and business has improved. The strong points in favor of the expansion of industrial operations next year, are the abundance of money, low rates of interest, the confidence of capitalists in the ability of Western and Southern borrowers to pay their loans; the strong probability of considerable railroad building which will probably reach three thousand miles more than this year, the development of a great many mines, the building of a number of small industries in the West; the condition of labor with regard to wages and hours of labor and a generally satisfactory account of investments in almost all channels. Labor organizations will not likely endeavor to unsettle existing friendly relations with employers but it is to be remarked that organizing is being pushed not only among the knights but among the old-time Trades-Unionists. Labor organization is making every effort to increase its strength, readers of newspaper comments must not take it for granted that the Knights are on the eve of dissolution but while it must be admitted that in the point of number it is weaker, it is in reality stronger in the fewer numbers of earnest men than it was in the hundreds of thousands whose only motive was to strike. The federated trades are stronger than they ever have been and it is their intention if possible at their next Convention to formulate and demand and endeavor to carry out the inauguration of the eight-hour system. Labor is stronger to-day than for years. It may be divided into an army of regulars and an army of volunteers. The volunteer side are those who have been members and have withdrawn, and of those who have never identified themselves with organization but who are willing to use all their powers in the cause. The various wings of the labor party understand each other better. Too much importance should not be placed on the allegations and factional contentions. Considerable disturbance exists but it can be easily silenced. Those who are now apparently the enemies of those in power will become their staunchest friends and supporters.

S. J. Parkhill & Co., Printers, Boston.